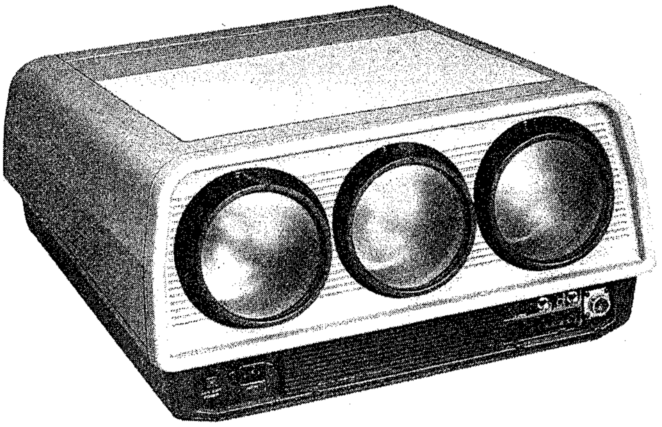
VPH-1000QM

SERVICE MANUAL

AEP Model

Chassis No. SCC-B82B-A



SPECIFICATIONS

Optical

Projection system	3 picture tubes, 3 lenses, direct projection system
Picture tube	5.5-inch high-brightness monochrome tubes, with coolant sealed
Projection lens	High-performance hybrid lenses F1.0/130 mm
Projected picture size	70 – 250 inches measured diagonally Factory-adjusted to 100 inches measured diagonally
Light output	600 lm

General

Color system	PAL, SECAM, NTSC and $NTSC_{4.43}$ systems, switched automatically
Resolution	650 TV lines
Test signal	Cross-hair test pattern generator incorporated
Speaker	5 x 9 cm (2 x 3½ inches), 1 unit, 3 W

– Continued on next page –

MICROFILM

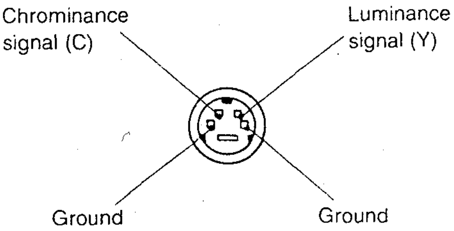
COLOR VIDEO PROJECTOR

SONY®

Inputs

LINE IN

S VIDEO: 4-pin mini DIN connector
Y (luminance) signal: 1 Vp-p ±2 dB, sync negative, 75 ohms terminated
C (chrominance) signal: burst
0.286 Vp-p ±2dB, 75 ohms terminated (NTSC)
0.3 Vp-p ±2dB, 75 ohms terminated (PAL)



VIDEO: BNC connector
Composite video input,
1 Vp-p ±2 dB, sync negative,
75 ohms terminated
AUDIO: phono jack
0.5 Vrms
Impedance: more than 47 kohms

TO VPR-722S

14-pin connector

Output

MONITOR OUT

VIDEO: BNC connector
Composite video output,
1 Vp-p ±2 dB, impedance
75 ohms,
Selected video output
With the remote controller:
Video signal from the controller*
Without the remote controller:
Video signal from the LINE IN VIDEO connector*

* The separated Y and C signals input to the S VIDEO connector is output as a composite video signal.

Power requirements
220 – 240 V AC, 50/60 Hz

Power consumption
210W

Dimensions
Approx. 532 x 288 x 597 mm (w/h/d)
(21 x $11^{3}/_{8}$ x $23^{5}/_{8}$ inches)
With the brackets pushed down, incl. projecting parts and controls

Weight
Approx. 30 kg
(66 lb 2 oz)

Accessories supplied
AC power cord (1)
Spacer for 200" projection (4)

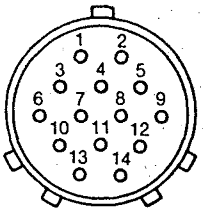
Design and specifications subject to change without notice.

Optional Accessories

Remote controller VPR-722S
Projector pedestal SU-722
Projector suspension support PSS-722, PSS-10
Screen VPS-100F1 (100" flat)
VPS-120F (120" flat)
VPS-72HG1 (72" curved)
VPS-100HG1 (100" curved)
VPS-700R (70" rear projection)
Carrying case VLC-1040
CCQ BRS cables

Pin Assignment

TO VPR-722S connector (14-pin)



Pin No.	Signal	Pin No.	Signal
1	Ground	8	Input select
2	+28V ⎓ 60mA	9	Audio (incl. volume control)
3	Hue 1	10	Brightness
4	Hue 2	11	Sharpness or chrominance signal
5	Hue 3	12	Color
6	Video or luminance signal	13	Picture
7	Ground (video)	14	Power ON: 12V OFF: 0 V

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

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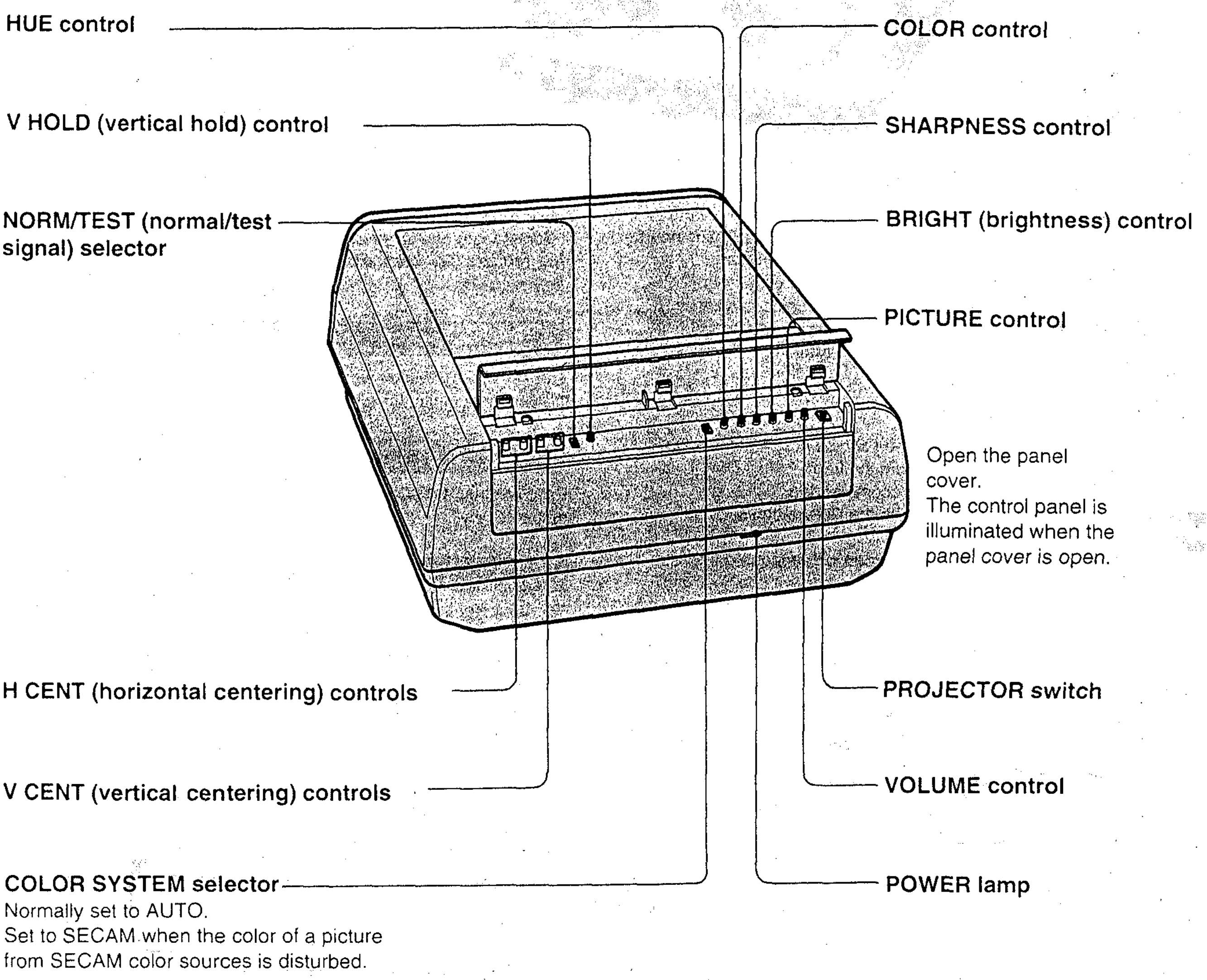
SECTION 1
GENERAL

1-1. LOCATION AND FUNCTION OF CONTROLS

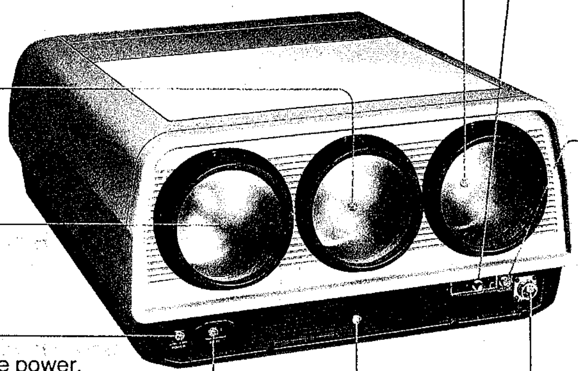
Control panel


HUE control
V HOLD (vertical hold) control
NORM/TEST (normal/test signal) selector
COLOR control
SHARPNESS control
BRIGHT (brightness) control
PICTURE control
H CENT (horizontal centering) controls
V CENT (vertical centering) controls
COLOR SYSTEM selector
PROJECTOR switch
VOLUME control
POWER lamp

Open the panel cover.
The control panel is illuminated when the panel cover is open.

Normally set to AUTO.
Set to SECAM when the color of a picture from SECAM color sources is disturbed.

Connector panel



Blue lens

Green lens

Red lens

POWER swtich
Depress to turn on the power.
When the remote controller is connected, power is supplied to the controller.

AC IN socket

Speaker

LINE IN (line input) connectors
S VIDEO (4-pin, mini DIN)
VIDEO (BNC)
AUDIO (phono)

Note
The VIDEO connector is disconnected automatically when a cable is connected to the S VIDEO connector.

MONITOR OUT (monitor output) connector (BNC)
The signal input to the TO VPR-722S, S VIDEO or VIDEO input connector is output from this connector.*
If signals are connected to each connector, the output signal is selected according to the following priority: TO VPR-722S, S VIDEO and VIDEO.

TO VPR-722S connector (14-pin, male)

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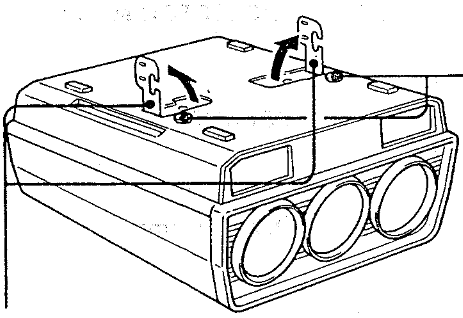
* The separated Y (luminance) and C (chrominance) signals input to the S VIDEO connector is output as composite video signal.

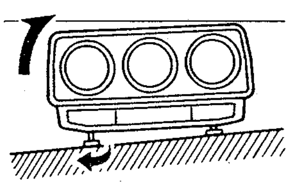
Bottom



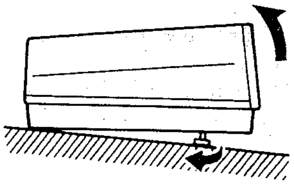
Brackets
Used for attaching the projector to the PSS-722 suspension support or the SU-722 pedestal.

Adjustable feet
The horizontal balance and angle of the projector can be adjusted with these feet.
The feet are factory-adjusted to the shortest length for a flat base.

Turn either foot to obtain horizontal balance.



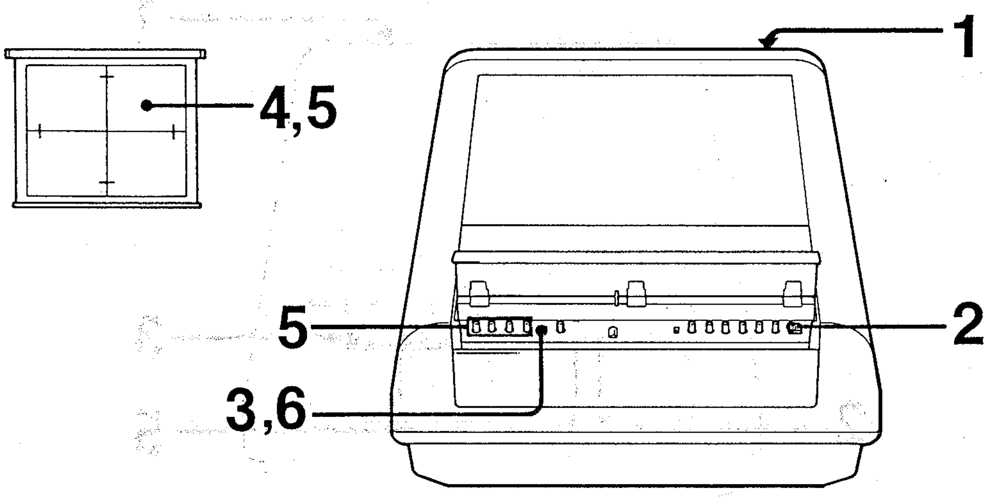
Turn both feet to adjust the angle.



1-2. POSITION AND REGISTRATION ADJUSTMENT

Installation and preliminary adjustments should be carried out by qualified Sony personnel.

When the projector is installed on a desk or on the floor using the pedestal, it can be easily moved but it may be necessary to readjust the registration.

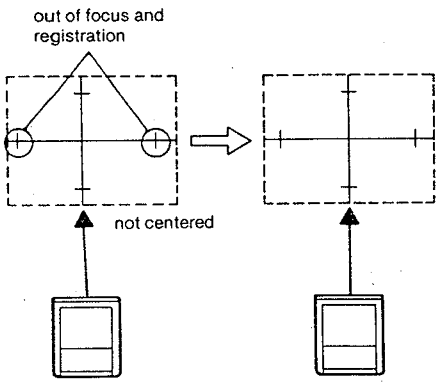


1 Depress the POWER switch (ON).

2 Depress the PROJECTOR switch (ON).

3 Set the NORM/TEST selector to TEST.
The built-in cross-hair test pattern will be displayed.

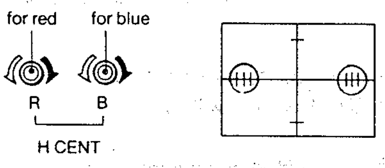
4 Check if the test pattern is centered and focused.
If not, move the projector slightly so that the pattern is clearly displayed.



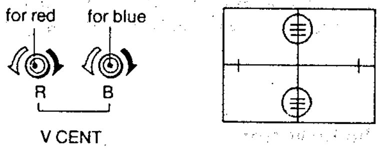
For the appropriate distance between the projector and the screen.

5 Adjust the H CENT and V CENT controls so that the red and blue lines converge with the green line and the test pattern is seen as white.

Turn the controls clockwise to move the red and blue vertical lines to the right; turn counterclockwise to move to the left.



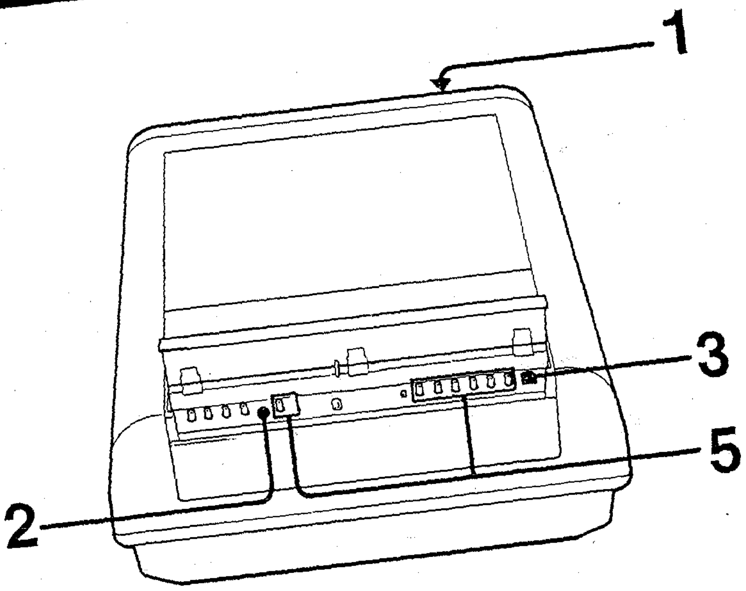
Turn the controls clockwise to move the red and blue horizontal lines upward; turn counterclockwise to move downward.



6 After the adjustment is complete, set the NORM/TEST selector to NORM.

1-3. PROJECTING

Operation



1 Depress the POWER switch (ON).

2 Make sure that the NORM/TEST selector is set to NORM.

3 Depress the PROJECTOR switch(ON).
The green POWER lamp will light.

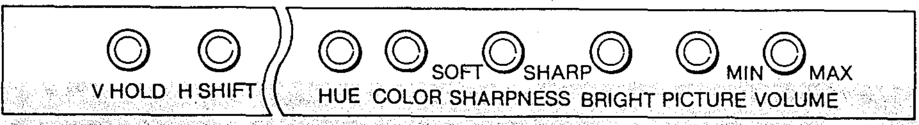
4 Turn on the connected equipment.
The picture will be projected on the screen and the sound will be heard from the speaker.

5 Adjust the picture and sound to your preference.
See "Picture and sound adjustments" on page 9.

To turn off the projector
Press the PROJECTOR switch again (OFF).

To turn off the power
Press the POWER switch (OFF).

Picture and Sound Adjustments



VOLUME	Turn toward MAX to increase volume, and toward MIN to decrease it.
PICTURE	Turn clockwise to increase picture contrast, color intensity and brightness in the proper ratio, and counterclockwise to decrease them.
BRIGHT	Turn clockwise for more brightness, and counterclockwise for less.
SHARPNESS	Turn clockwise for sharp picture, and counterclockwise for soft.
COLOR	Turn clockwise for more color intensity, and counterclockwise for less.

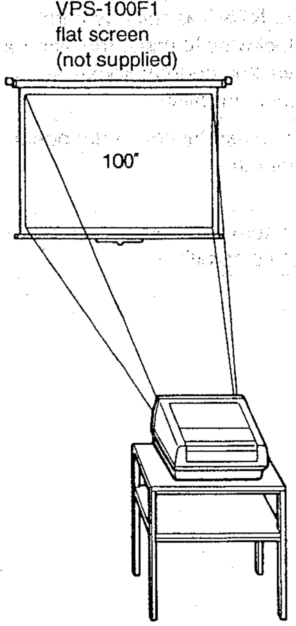
HUE	(Effective only for a program of the NTSC or NTSC4.43 color system) Turn clockwise to make the skin tones greenish, and counterclockwise to make them purplish.
H SHIFT	Turn to adjust the horizontal position of the picture.
V HOLD	If the picture rolls vertically, turn until the picture stabilizes.

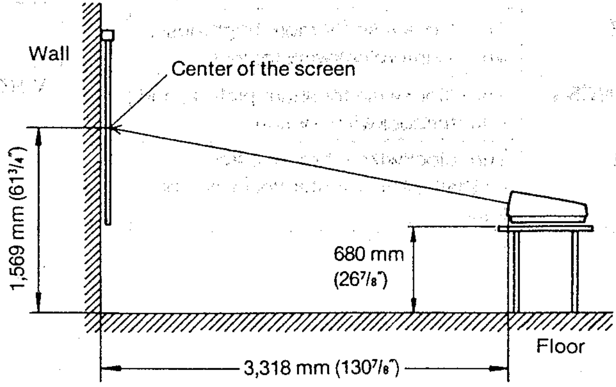
1-4. INSTALLATION DIAGRAMS(1)

For the same type of installation in another place, no readjustment is required, although the projector should be placed in the proper position.
The projector is preadjusted at the factory for 100" projection, and internal conversion is necessary for other projection sizes. For internal conversion, consult the qualified Sony personnel.

For 100" Projection

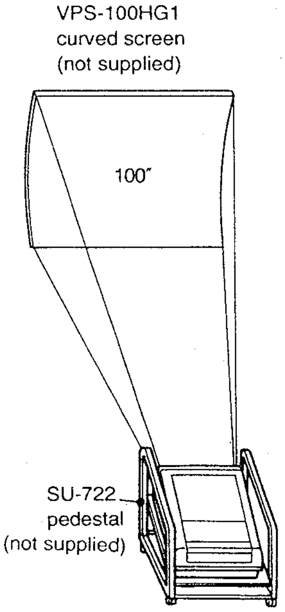
Desk

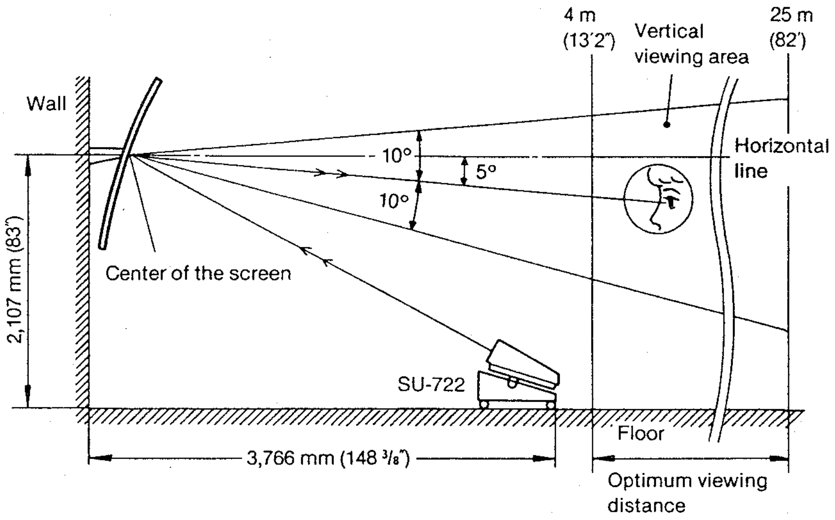

VPS-100F1
flat screen
(not supplied)
100"


Wall
Center of the screen
1,569 mm (61¾")
680 mm
(26⅞")
Floor
3,318 mm (130⅞")

Tolerance in length: ±1%

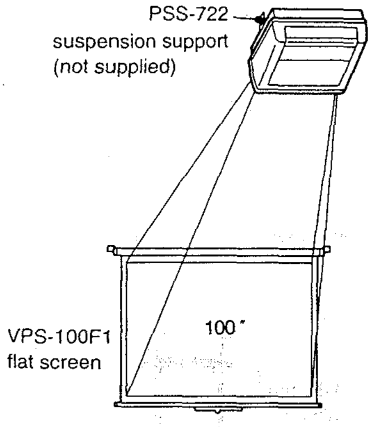
Floor

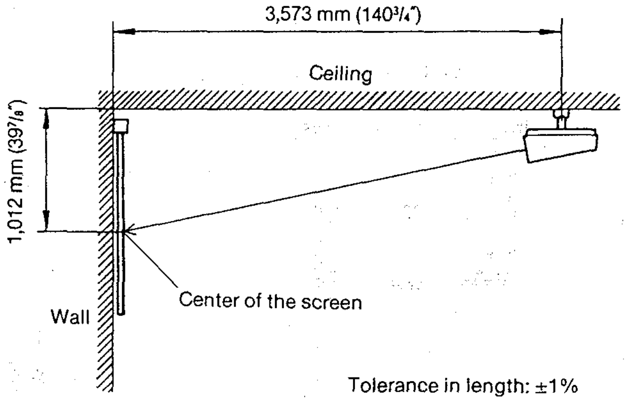

VPS-100HG1
curved screen
(not supplied)
100"
SU-722
pedestal
(not supplied)

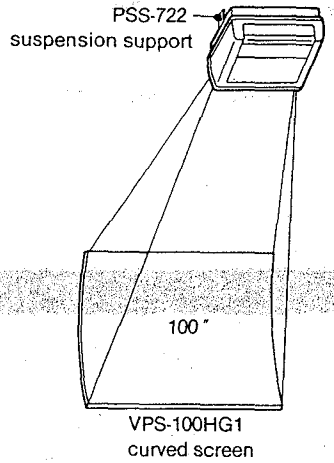

4 m
(13'2")
Vertical
viewing area
25 m
(82')
Wall
10°
5°
10°
Horizontal
line
Center of the screen
2,107 mm (83")
SU-722
Floor
3,766 mm (148 ⅜")
Optimum viewing
distance

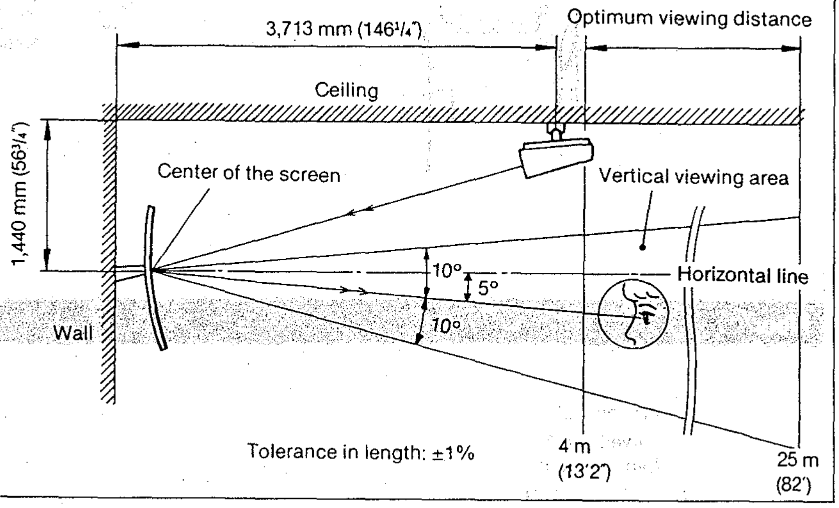
Tolerance length: ±1%

Ceiling

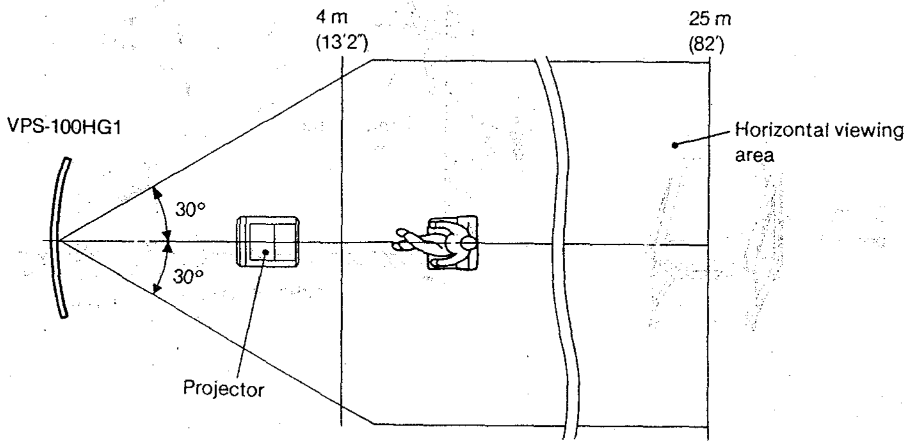

PSS-722
suspension support
(not supplied)
VPS-100F1
flat screen
100"


3,573 mm (140¾")
Ceiling
1,012 mm (39⅞")
Wall
Center of the screen
Tolerance in length: ±1%


PSS-722
suspension support
100"
VPS-100HG1
curved screen

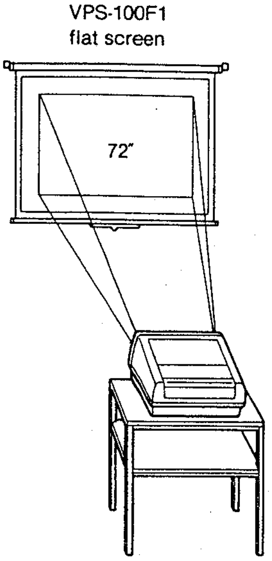

3,713 mm (146¼")
Optimum viewing distance
Ceiling
1,440 mm (56¾")
Center of the screen
Vertical viewing area
10°
5°
Horizontal line
10°
Wall
Tolerance in length: ±1%
4 m
(13'2")
25 m
(82')

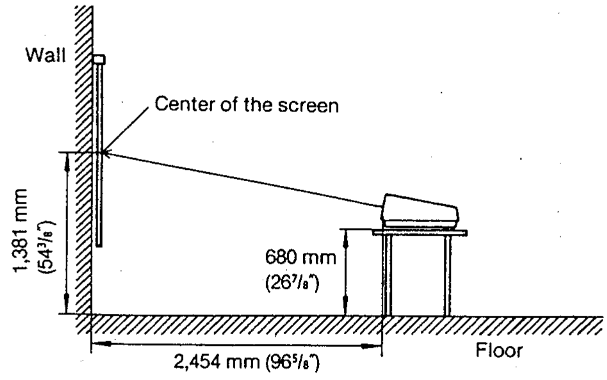
Horizontal viewing area for the VPS-100HG1


4 m
(13'2")
25 m
(82')
VPS-100HG1
Horizontal viewing area
30°
30°
Projector

For 72″ Projection

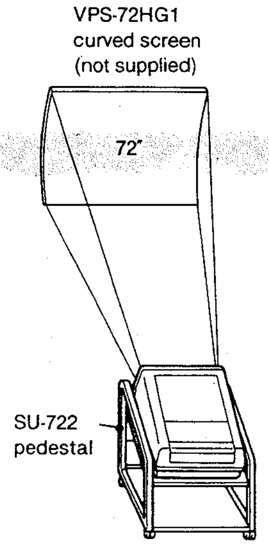
Desk

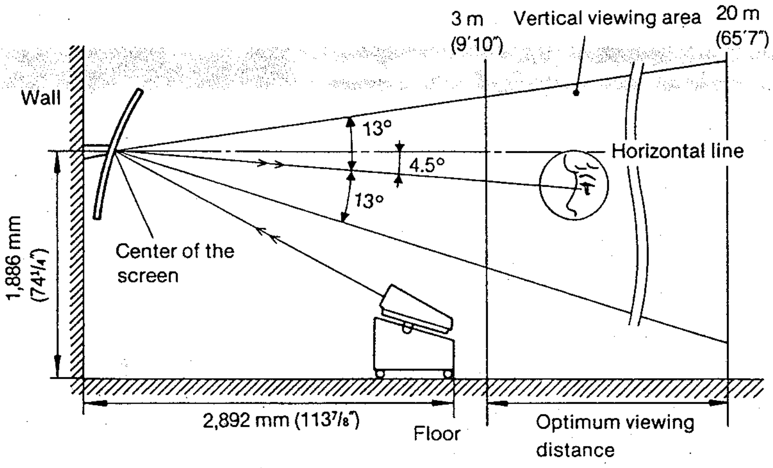

VPS-100F1
flat screen
72″


Wall
Center of the screen
1,381 mm (54 3/8″)
680 mm (26 7/8″)
2,454 mm (96 5/8″)
Floor

Tolerance in length: ±1%

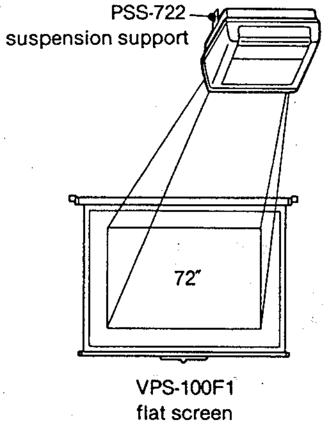
Floor

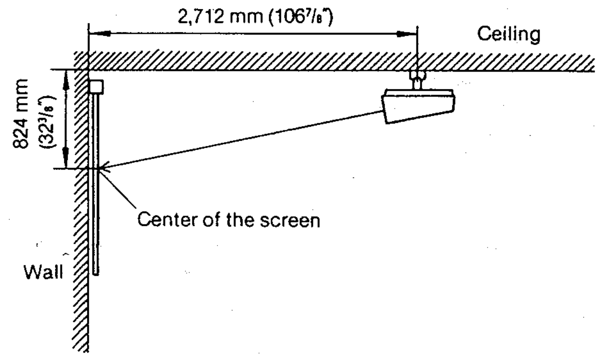

VPS-72HG1
curved screen
(not supplied)
72″
SU-722
pedestal


3 m
(9′10″)
Vertical viewing area
20 m
(65′7″)
Wall
13°
4.5°
Horizontal line
13°
1,886 mm (74 1/4″)
Center of the screen
2,892 mm (113 7/8″)
Floor
Optimum viewing distance

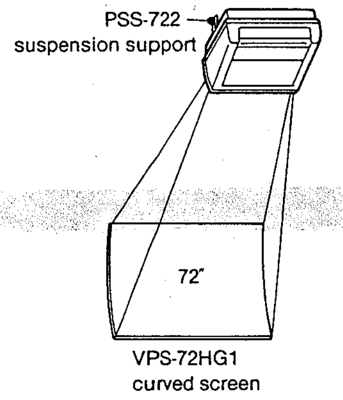
Tolerance in length: ±1%

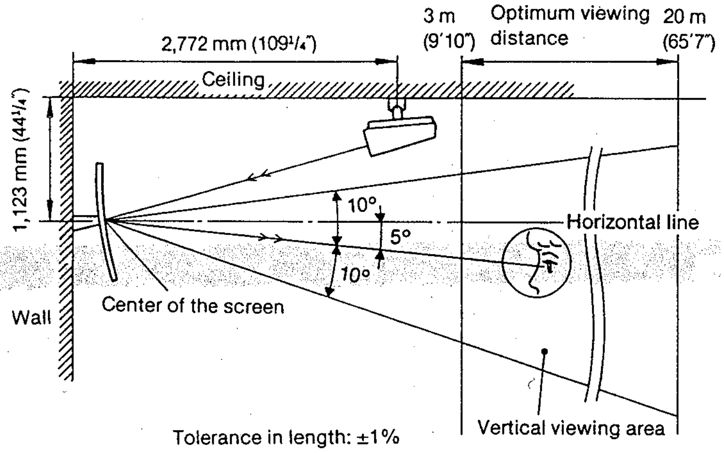
Ceiling


PSS-722
suspension support
72"
VPS-100F1
flat screen


2,712 mm (106 7/8")
Ceiling
824 mm
(32 3/8")
Center of the screen
Wall

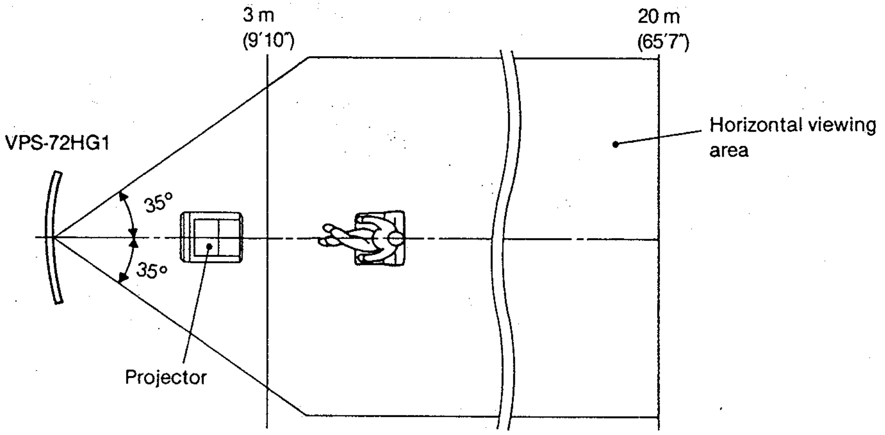
Tolerance in length: ±1%


PSS-722
suspension support
72"
VPS-72HG1
curved screen


3 m
(9'10")
Optimum viewing
distance
20 m
(65'7")
2,772 mm (109 1/4")
Ceiling
1,123 mm (44 1/4")
10°
5°
10°
Horizontal line
Center of the screen
Wall
Vertical viewing area

Tolerance in length: ±1%

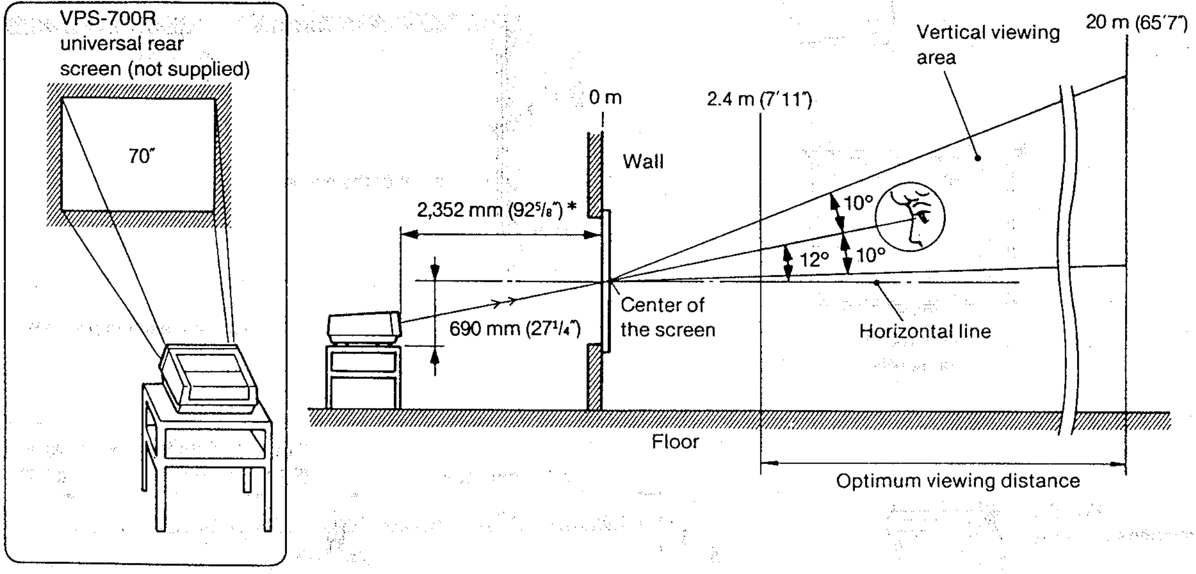
Horizontal viewing area for the VPS-72HG1


3 m
(9'10")
20 m
(65'7")
VPS-72HG1
Horizontal viewing
area
35°
35°
Projector

For 70″ Rear Projection

Desk

The viewing area is set upwards.

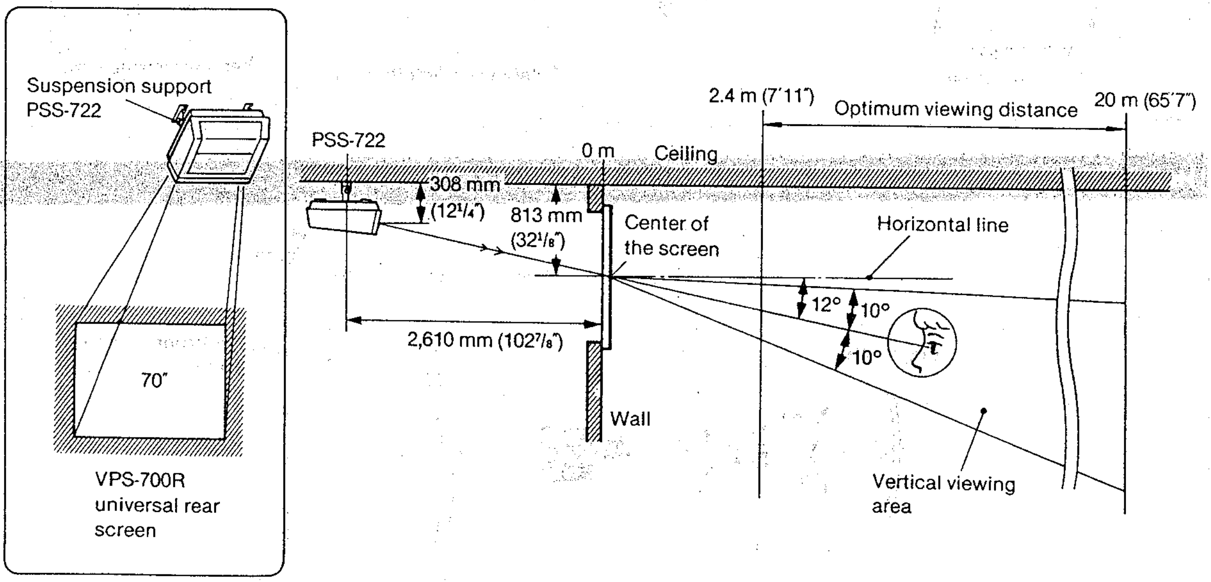

VPS-700R
universal rear
screen (not supplied)
70″
0 m
2.4 m (7′11″)
20 m (65′7″)
Vertical viewing
area
Wall
2,352 mm (92⁵/₈″) *
10°
12°
10°
690 mm (27¹/₄″)
Center of
the screen
Horizontal line
Floor
Optimum viewing distance

* Distance between the rear of the screen and the center of the G lens.

Tolerance in length: ±1%

Ceiling

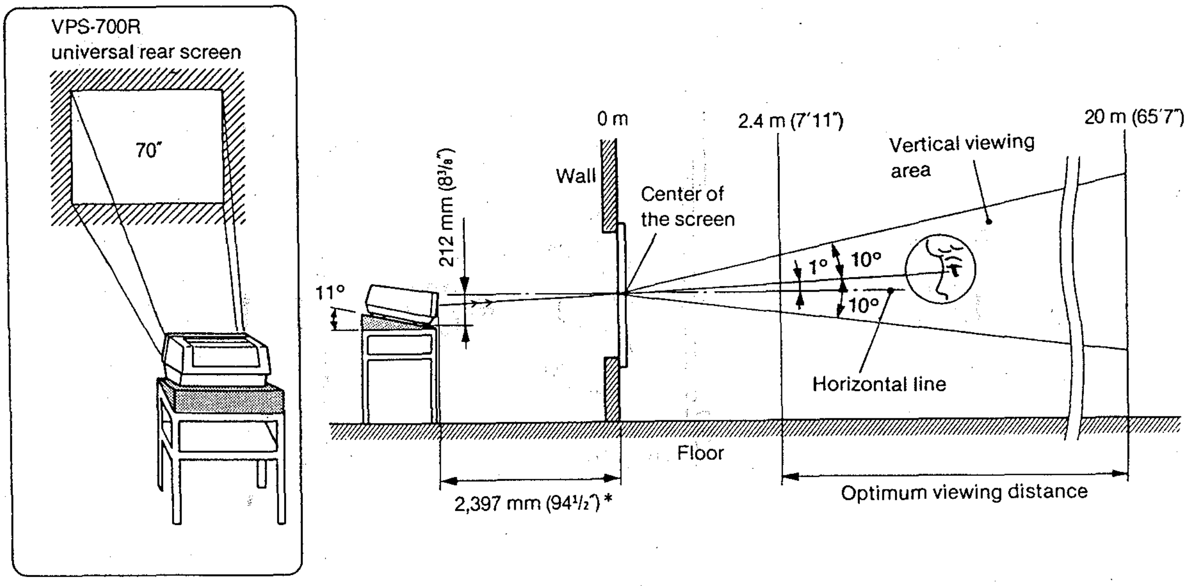
The viewing area is set downwards.


Suspension support
PSS-722
PSS-722
0 m
Ceiling
2.4 m (7′11″)
Optimum viewing distance
20 m (65′7″)
308 mm
(12¹/₄″)
813 mm
(32¹/₈″)
Center of
the screen
Horizontal line
12°
10°
10°
2,610 mm (102⁷/₈″)
Wall
70″
VPS-700R
universal rear
screen
Vertical viewing
area

Tolerance in length: ±1%

Level Projection

The viewing area is set approximately direct (approx. 1° upward).

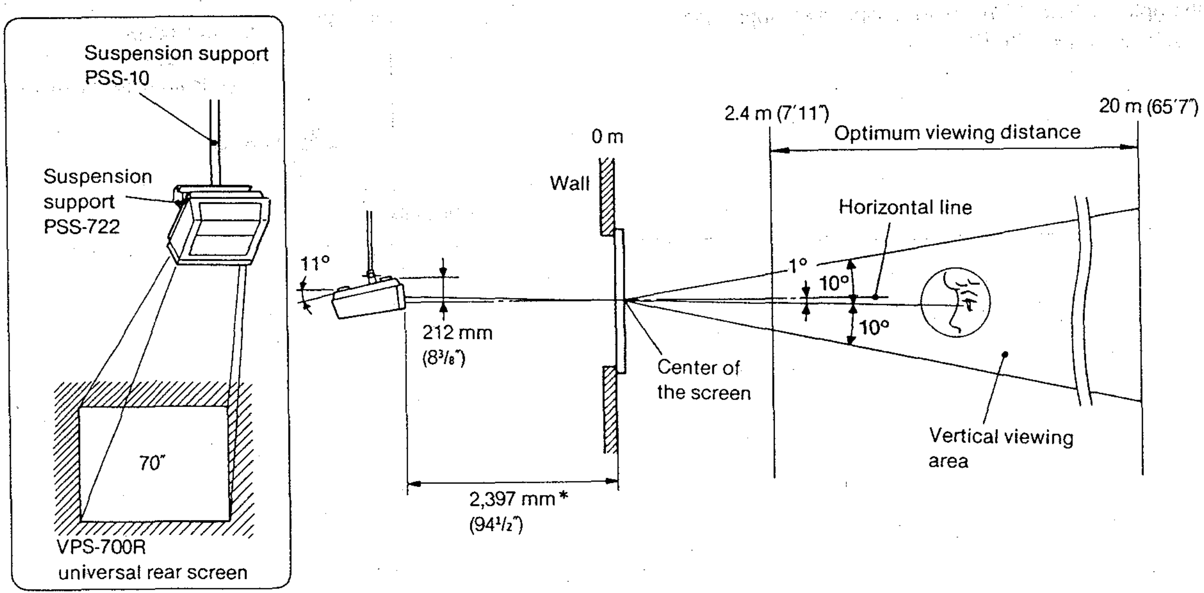

VPS-700R
universal rear screen
70"
0 m
2.4 m (7'11")
20 m (65'7")
Wall
212 mm (8³/₈")
Center of
the screen
Vertical viewing
area
11°
1°
10°
10°
Horizontal line
Floor
2,397 mm (94¹/₂")*
Optimum viewing distance

* Distance between the rear of the screen and the center of the G lens.

Tolerance in length: ±1%

Upturned Level Projection

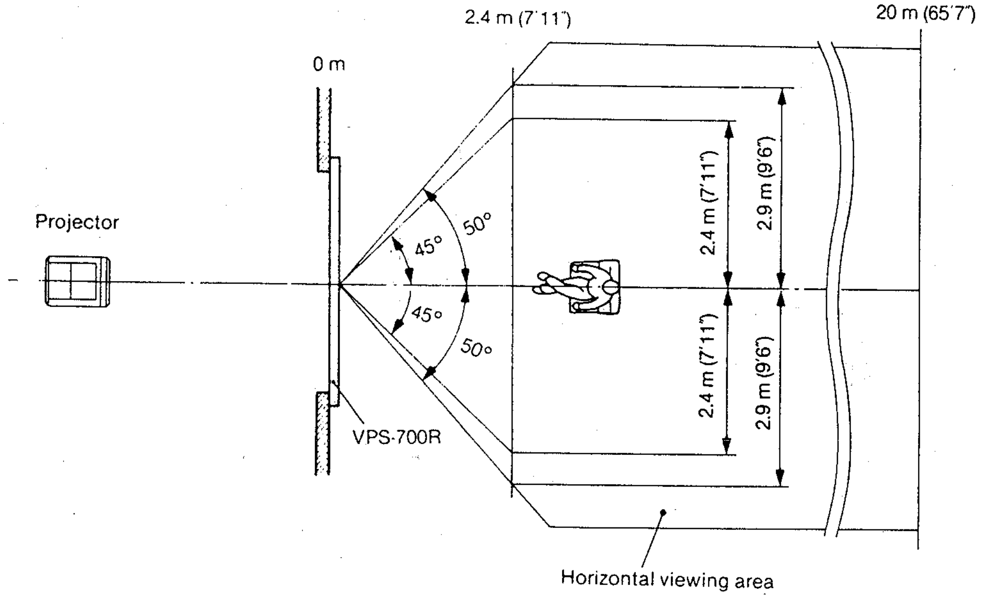
The viewing area is set approximately direct (approx. 1° downward).


Suspension support
PSS-10
Suspension
support
PSS-722
70"
VPS-700R
universal rear screen
0 m
2.4 m (7'11")
20 m (65'7")
Optimum viewing distance
Wall
Horizontal line
11°
1°
10°
10°
212 mm
(8³/₈")
Center of
the screen
Vertical viewing
area
2,397 mm*
(94¹/₂")

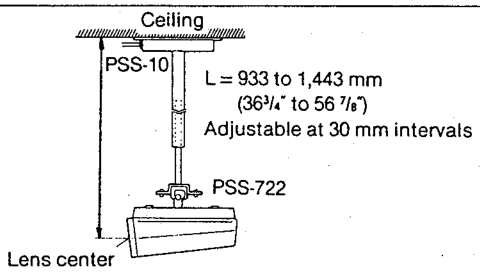
* Distance between the rear of the screen and the center of the G lens.

Tolerance in length: ±1%

Horizontal viewing area for the VPS-700R


2.4 m (7'11")
20 m (65'7")
0 m
Projector
45°
50°
45°
50°
2.4 m (7'11")
2.9 m (9'6")
2.4 m (7'11")
2.9 m (9'6")
VPS-700R
Horizontal viewing area

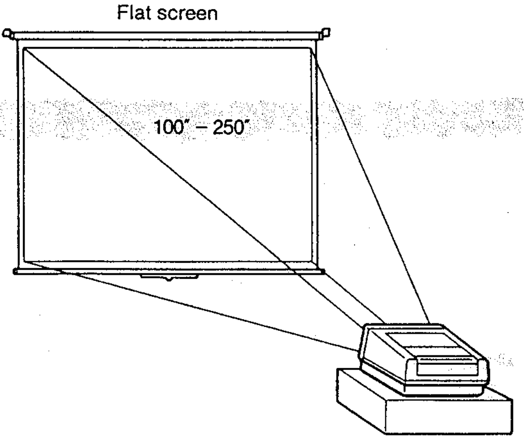
To adjust the distance between the ceiling and the projector, use the optional PSS-10 projector suspension support in combination with the PSS-722.

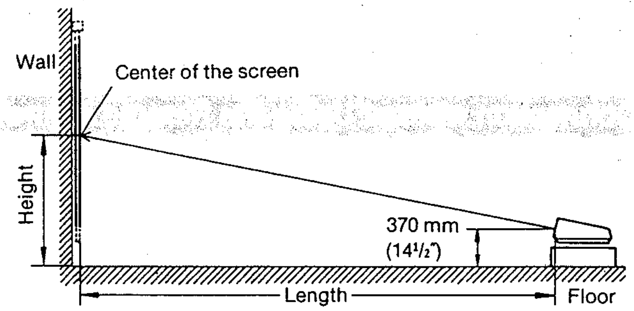

Ceiling
PSS-10
L = 933 to 1,443 mm
(36³/₄" to 56 ⁷/₈")
Adjustable at 30 mm intervals
PSS-722
Lens center

For 100"–250" Projection

Decide the length and height according to the size of the screen to be used.
For a screen not described in the tables, set the length approximately 1.6 times screen width.

Floor

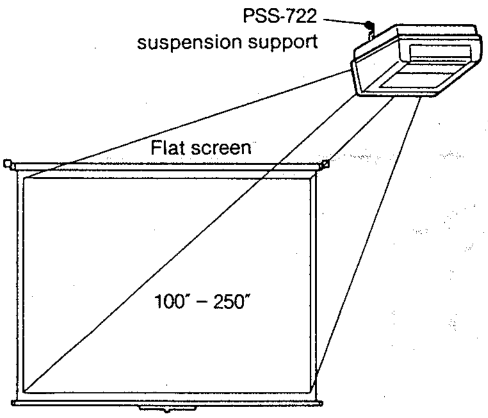

Flat screen
100" – 250"

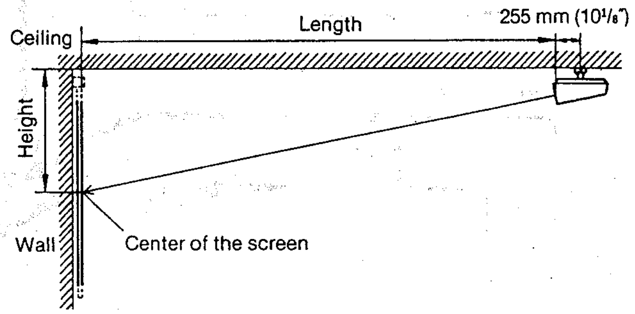

Wall
Center of the screen
Height
370 mm
(14 1/2")
Length
Floor

Screen size	150 inches	200 inches	250 inches
Length mm	4850 (191")	6410 (252 1/2")	7960 (313 1/2")
Height mm	1410 (55 1/2")	1740 (68 1/2")	2080 (82")

Tolerance in length: ±1%

Ceiling


PSS-722
suspension support
Flat screen
100" – 250"


Ceiling
Length
255 mm (10 1/8")
Height
Wall
Center of the screen

Screen size	150 inches	200 inches	250 inches
Length mm	4850 (191")	6410 (252 1/2")	7960 (313 1/2")
Height mm	1350 (53 1/4")	1680 (66 1/4")	2020 (79 1/2")

Tolerance in length: ±1%

To use 150" to 250" screens, the projector should be converted for 200" projection. For conversion, consult the qualified Sony personnel.

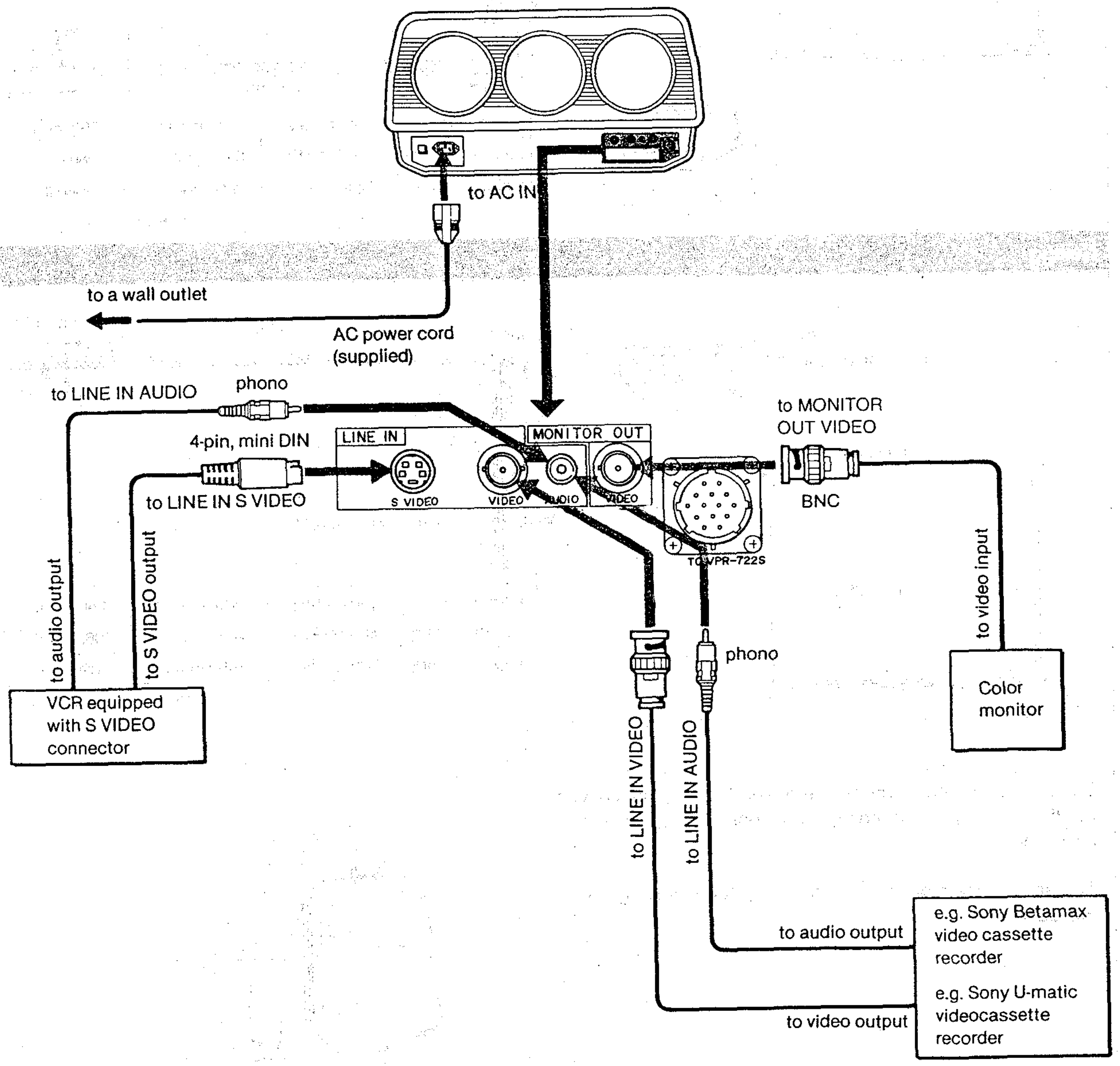
To transport the projector, use the VLC-1040 carrying case (not supplied).

1-5. SYSTEM CONNECTIONS

Notes on Connections

- First make sure that the power to each piece of equipment is turned off.
- The cable connectors should be fully inserted into the jacks. A loose connection may cause hum and noise.
- To disconnect the cable, pull it out by grasping the plug. Never pull the cable itself.
- Use suitable connecting cables according to the equipment to be connected.
- For connection to the VIDEO IN and TO VPR-722S connectors, the connecting cable may be extended to max. 50 m (164 feet 1/2 inch). If the connecting cable is longer than 50 m, picture quality may be impaired somewhat.
- Read the instruction manual of the equipment to be connected.

Connection without Using the Remote controller

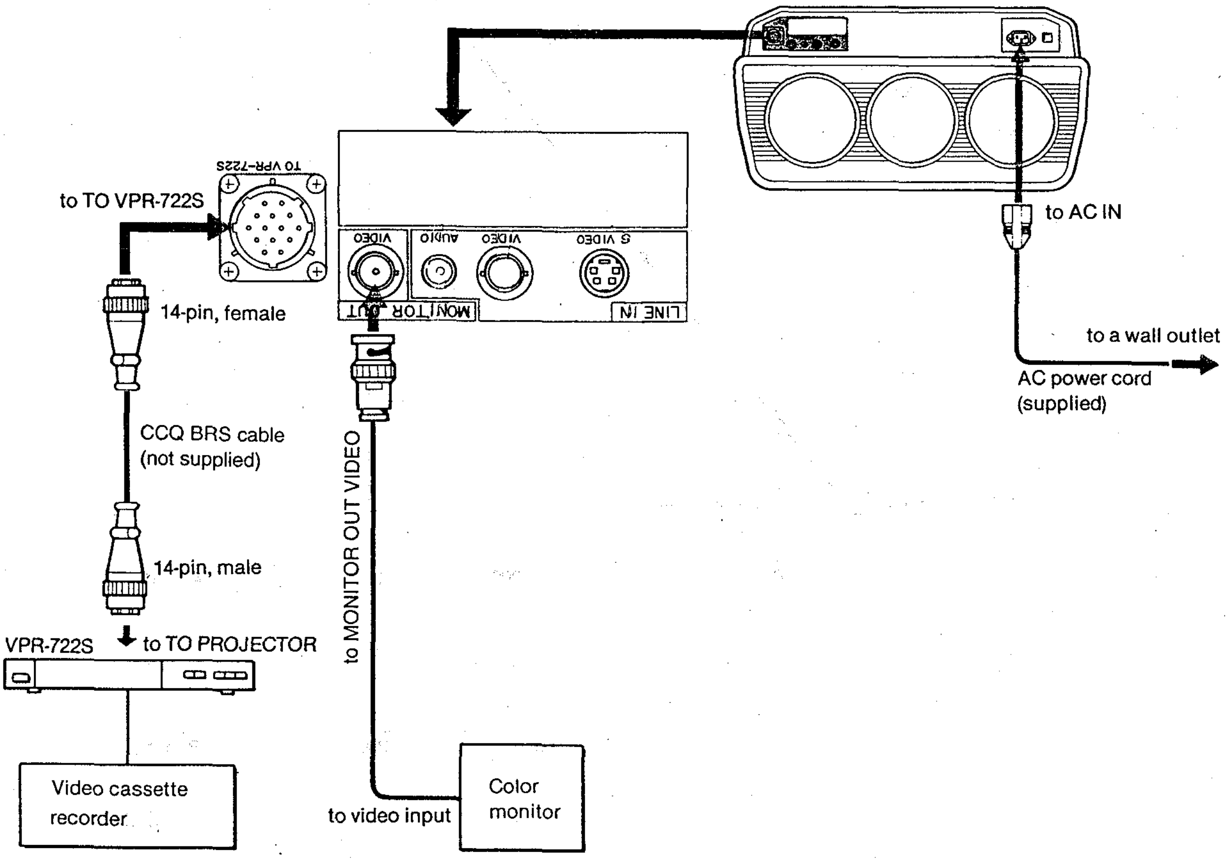

to AC IN
to a wall outlet
AC power cord
(supplied)
to LINE IN AUDIO
phono
4-pin, mini DIN
to LINE IN S VIDEO
LINE IN
S VIDEO
VIDEO
AUDIO
MONITOR OUT
VIDEO
TO VPR-722S
to MONITOR
OUT VIDEO
BNC
to audio output
to S VIDEO output
VCR equipped
with S VIDEO
connector
phono
to LINE IN VIDEO
to LINE IN AUDIO
to video input
Color
monitor
to audio output
to video output
e.g. Sony Betamax video cassette recorder
e.g. Sony U-matic videocassette recorder

Using the Remote Controller

Use the VPR-722S remote controller (not supplied) when the projector is installed on the ceiling or when you want to operate the projector at a distance from your seat.

Remote Controllable Operations

- Power on/off
- Picture and sound adjustments

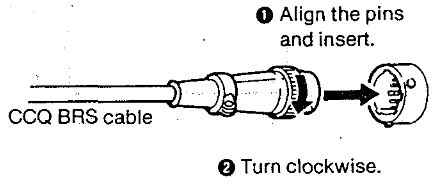

TO VPR-722S
to TO VPR-722S
14-pin, female
CCQ BRS cable
(not supplied)
14-pin, male
VPR-722S
to TO PROJECTOR
Video cassette recorder
VIDEO
AUDIO
VIDEO
S VIDEO
MONITOR OUT
LINE IN
to MONITOR OUT VIDEO
to video input
Color monitor
to AC IN
to a wall outlet
AC power cord
(supplied)

Notes

When the remote controller is connected to the TO VPR-722S connector:

- The LINE IN S VIDEO, VIDEO and AUDIO connectors are disconnected automatically.
- The following controls and switches do not function with the controller connected:
  PROJECTOR, HUE, COLOR,
  SHARPNESS, BRIGHT, PICTURE, VOLUME .

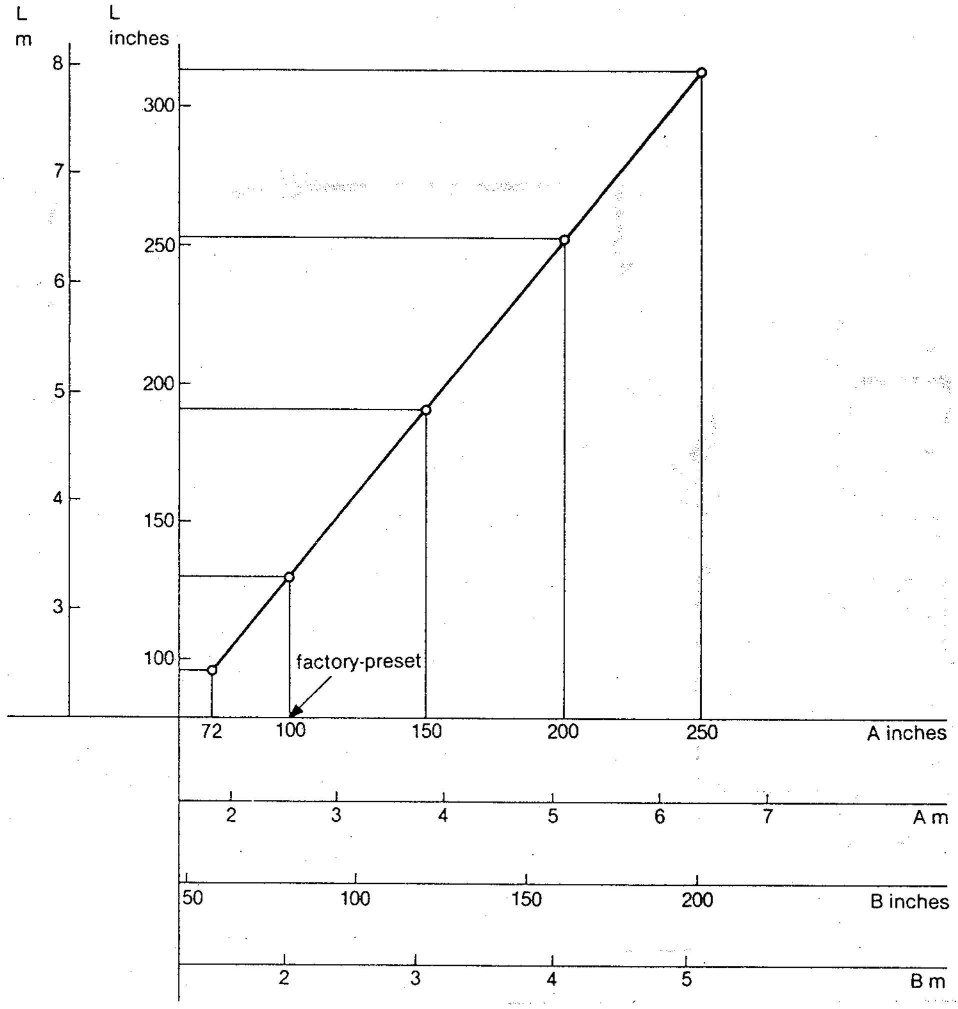
14-pin connector

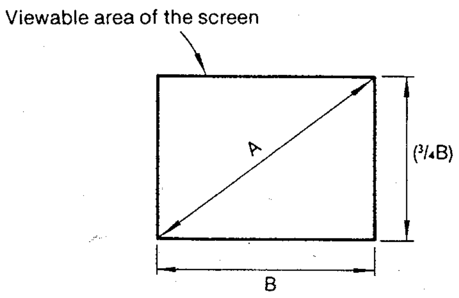

❶ Align the pins and insert.
CCQ BRS cable
❷ Turn clockwise.

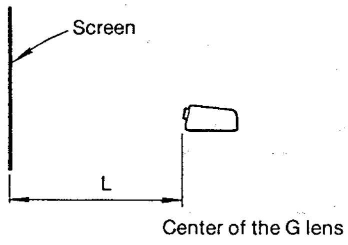
1-6. INSTALLATION DIAGRAMS (2)

Type 13 and Type 14

100" - 250" projection
For a screen not described on page 10, use the following graph to decide the distance between the screen and projector (L).



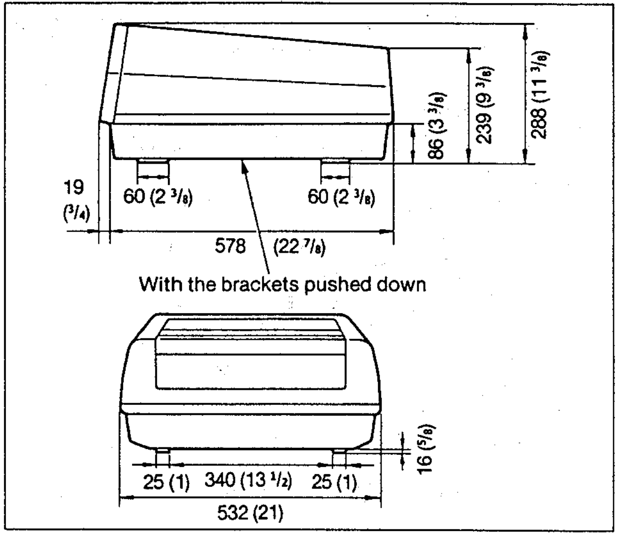

Viewable area of the screen
A
(3/4B)
B


Screen
L
Center of the G lens

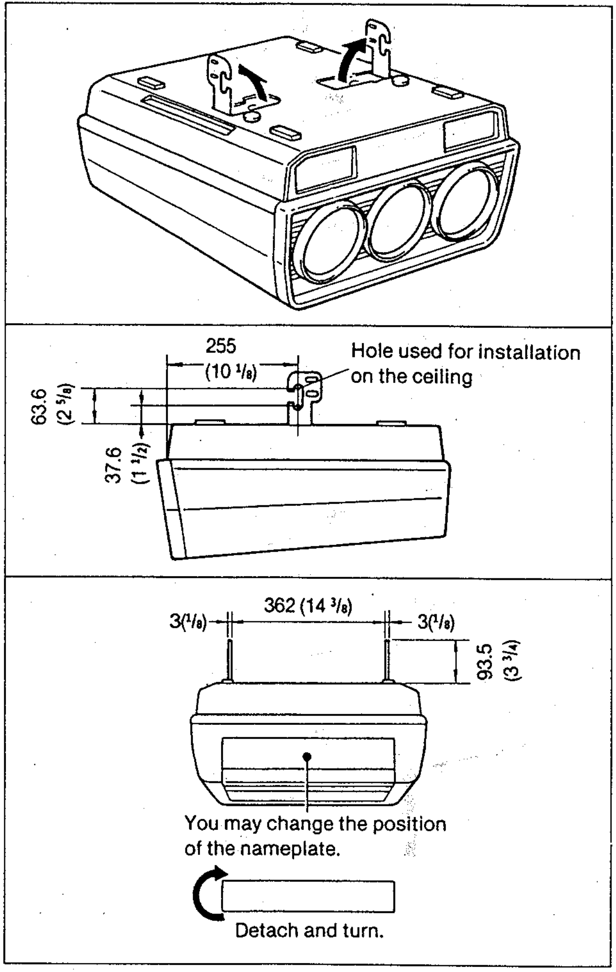
1-7. NOTES ON INSTALLATION

Projector's Dimensions

Unit: mm (inches)

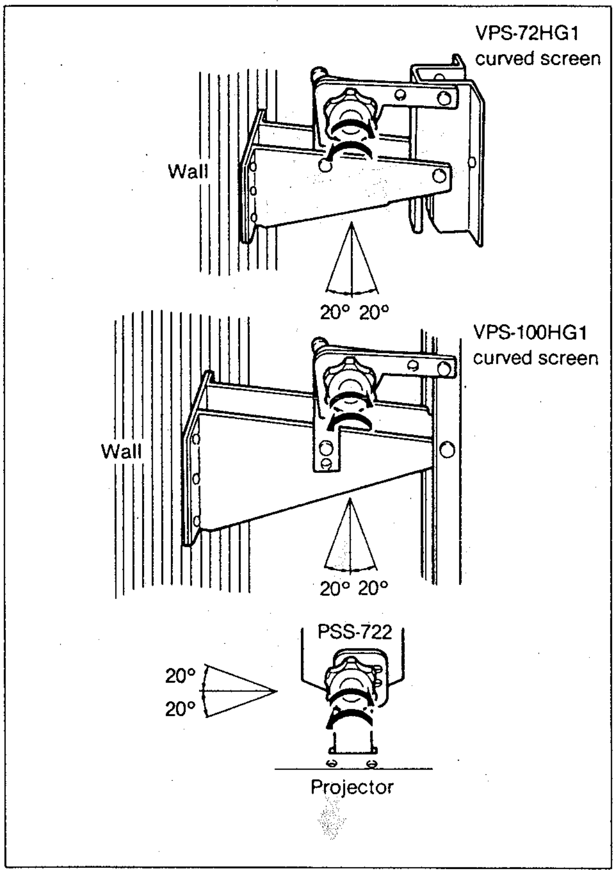

86 (3 3/8)
239 (9 3/8)
288 (11 3/8)
19
(3/4)
60 (2 3/8)
60 (2 3/8)
578 (22 7/8)
With the brackets pushed down
16 (5/8)
25 (1)
340 (13 1/2)
25 (1)
532 (21)

Raise the brackets when installing the projector on the ceiling or floor.


255
(10 1/8)
Hole used for installation on the ceiling
63.6
(2 5/8)
37.6
(1 1/2)
3(1/8)
362 (14 3/8)
3(1/8)
93.5
(3 3/4)
You may change the position of the nameplate.
Detach and turn.

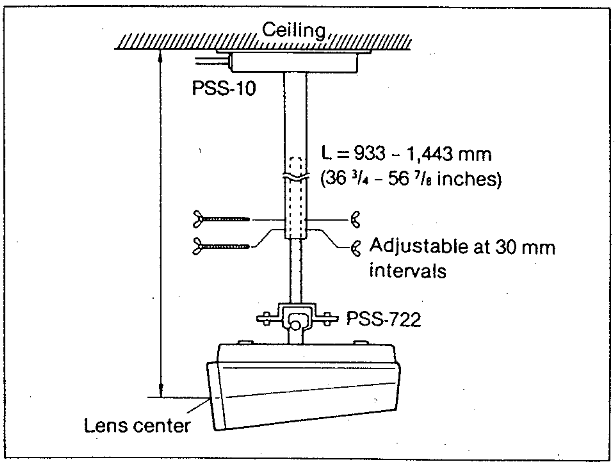
To Adjust the Angle of the Screen/ Projector

Loosen the knobs, adjust the angle, then tighten the knobs down firmly.


VPS-72HG1
curved screen
Wall
20° 20°
VPS-100HG1
curved screen
Wall
20° 20°
PSS-722
20°
20°
Projector

When the PSS-10 projector suspension support (optional) is used in combination with the PSS-722

The PSS-10 allows you to adjust the distance between the ceiling and the projector.

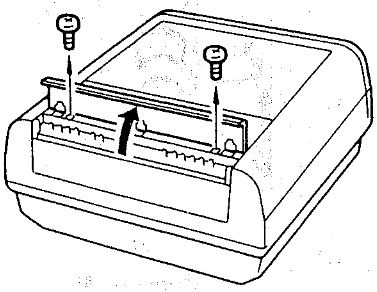

Ceiling
PSS-10
L = 933 - 1,443 mm
(36 3/4 - 56 7/8 inches)
Adjustable at 30 mm intervals
PSS-722
Lens center

To Open the Top Panel

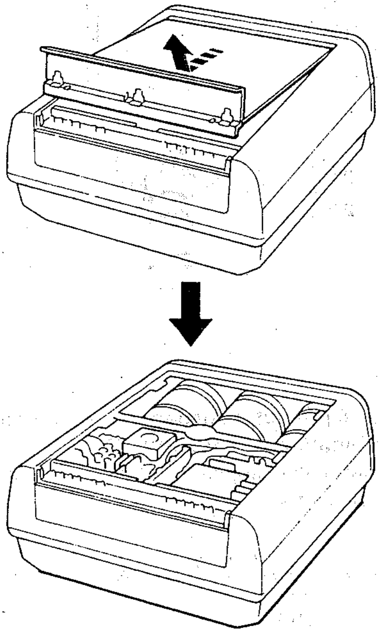
You will need a medium size Phillips head screwdriver.

1 Open the control panel cover.

2 Remove the two screws.



3 Pull the top panel slightly toward you and remove it.

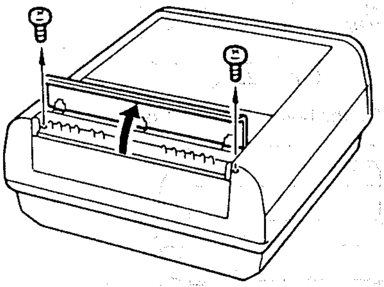


To Open the Cabinet

Open the cabinet when changing the voltage selector setting and when converting the unit for 200" projection.

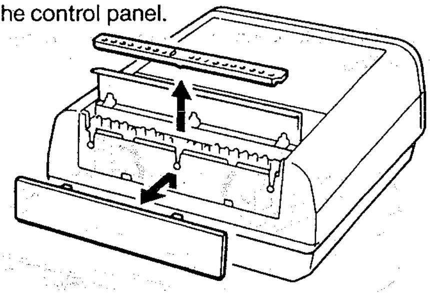
1 Open the control panel cover.

2 Remove the two screws on the control panel.

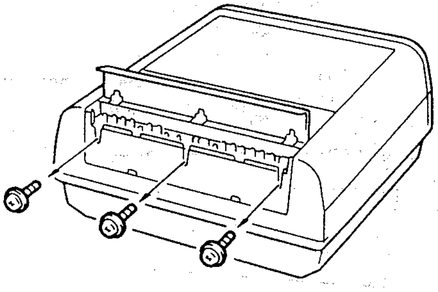


3 Slide the nameplate upward and pull it toward you to remove.

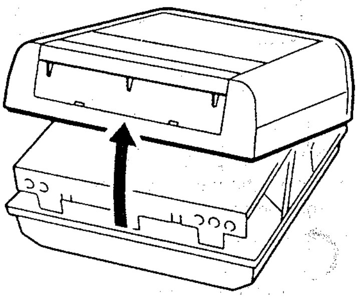
4 Remove the control panel.



5 Remove the three screws.



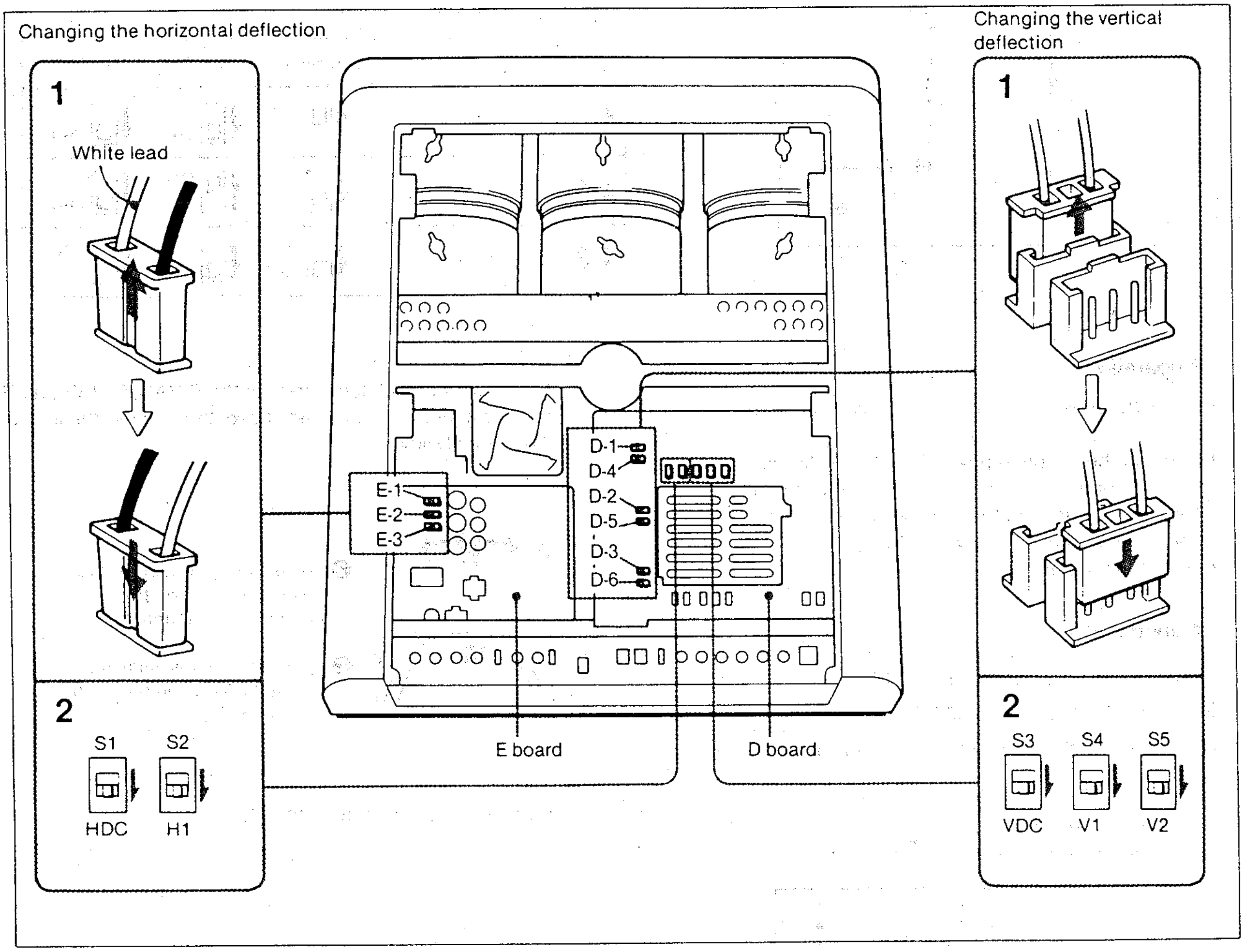
6 Raise the cabinet to remove.



1-8. POLARITY CHANGE

The projector is preadjusted at the factory for the front projection facing the screen, on desk or floor. When the projector is installed on the ceiling with the bracket side up or used for the rear projection, the polarity should be changed.
Horizontal and/or vertical deflection should be changed depending on the type of projection and installation location.

Projection type	**Installation location**	**Type of installation**	**Horizontal deflection change**	**Vertical deflection change**
Front projection	Ceiling	3 4 7 8 14	Necessary	Necessary
Rear projection	Desk, floor or level projection	9 11	Necessary	Unnecessary
	Ceiling or upturned level projection	10 12	Unnecessary	Necessary


Changing the horizontal deflection
1
White lead
2
S1
S2
HDC
H1
E-1
E-2
E-3
D-1
D-4
D-2
D-5
D-3
D-6
E board
D board
Changing the vertical deflection
1
2
S3
S4
S5
VDC
V1
V2

Preparations

- Make sure that power is not connected.
- Open the top panel.

To change the horizontal deflection

1 Reverse the polarity of connectors E-1, E-2 and E-3 on E board.

2 Set switches S1 and S2 on D board to the control panel side position.

To change the vertical deflection

1 Move the connectors on D board from receptacles D-1, D-2 and D-3 to receptacles D-4, D-5 and D-6, respectively.

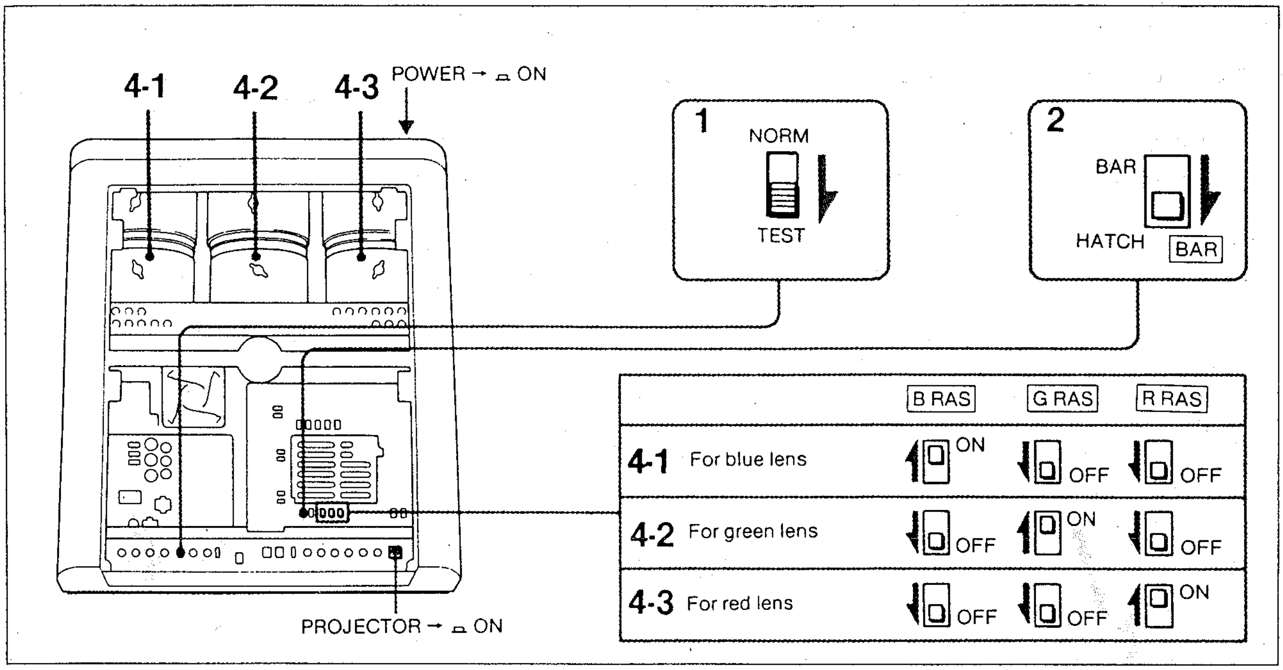
2 Set switches S3, S4 and S5 on D board to the control panel side position.

Note

Check that the connectors are inserted firmly, then proceed to lens focus adjustment with the projector's top panel removed.

1-9. LENS FOCUS ADJUSTMENT

The lens focus is preadjusted at the factory for 100" flat screen. For other type screens, the lens focus should be adjusted.


4-1
4-2
4-3
POWER → ▭ ON
PROJECTOR → ▭ ON
1
NORM
TEST
2
BAR
HATCH
BAR

		B RAS	G RAS	R RAS
4-1	For blue lens	ON	OFF	OFF
4-2	For green lens	OFF	ON	OFF
4-3	For red lens	OFF	OFF	ON

Preparations

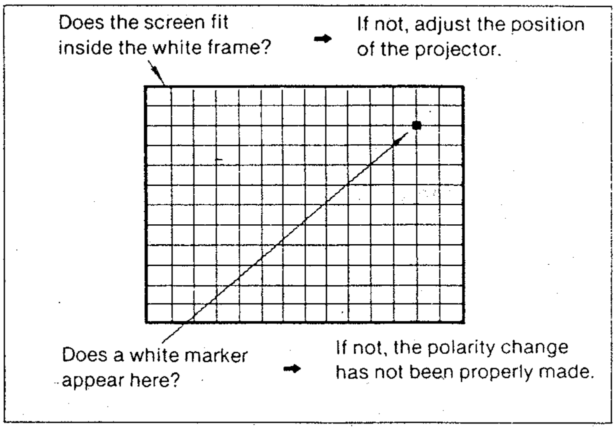
- Install the projector in the correct position on the floor or ceiling.
- Connect the supplied power cord to the AC IN socket and to an AC outlet, depress the POWER switch on the connector panel and the PROJECTOR switch.
  The green POWER lamp will light.
- Open the top panel.

Adjustment

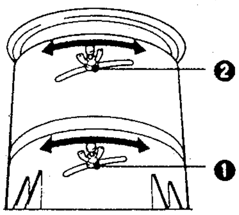
1 Set the NORM/TEST switch to TEST.

2 Set the BAR switch to HATCH.

3 A cross hatch pattern will be displayed. Check the following.


Does the screen fit inside the white frame?
→
If not, adjust the position of the projector.
Does a white marker appear here?
→
If not, the polarity change has not been properly made.

4 Adjust the lens focus.
For adjusting each lens, first set the B RAS, G RAS and R RAS switches as illustrated above, then adjust the lens as illustrated below.



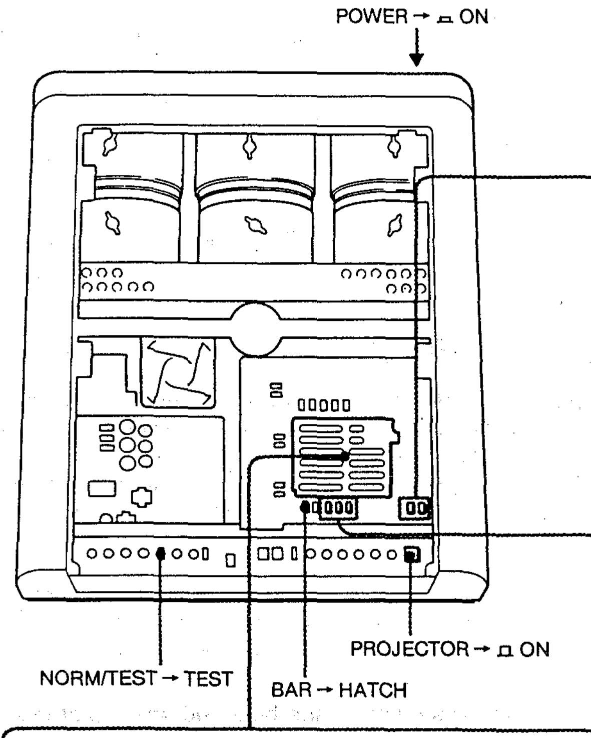
❷ Loosen the screw, slide it to adjust the focus on the corners, then tighten it.

❶ Loosen the screw, slide it to adjust the focus on the center, then tighten it.

Proceed to registration adjustment.

1-10. REGISTRATION ADJUSTMENT

Use a small screwdriver to adjust the controls through the holes.

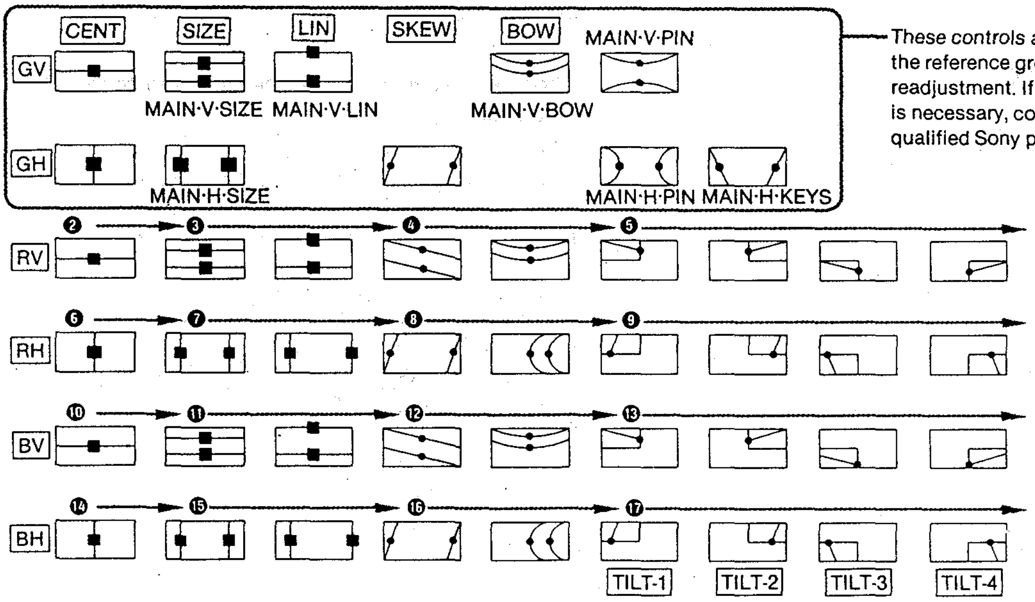

POWER → ⎍ ON
NORM/TEST → TEST
BAR → HATCH
PROJECTOR → ⎍ ON

Screen size	MODEL SELECT	SIZE SELECT
72" (70" - 85")	100	150/72
100" (85" - 125")	100	NORMAL
150" (125" - 175")	200	150/72
200" (175" - 250")	200	NORMAL

For registration of:	B RAS	G RAS	R RAS
red and green	OFF	ON	ON
blue and green	ON	ON	OFF

Controls for registration adjustment

The circled numbers refer to the sequence of adjustment.


CENT
SIZE
LIN
SKEW
BOW
MAIN·V·PIN
GV
MAIN·V·SIZE
MAIN·V·LIN
MAIN·V·BOW
GH
MAIN·H·SIZE
MAIN·H·PIN
MAIN·H·KEYS
RV
❷
❸
❹
❺
RH
❻
❼
❽
❾
BV
❿
⓫
⓬
⓭
BH
⓮
⓯
⓰
⓱
TILT-1
TILT-2
TILT-3
TILT-4

These controls are used for the reference green picture readjustment. If readjustment is necessary, consult the qualified Sony personnel.

Preparations

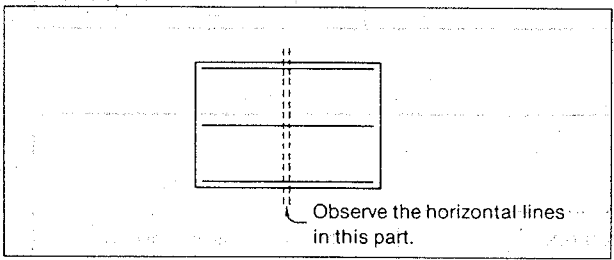
- Keep the G RAS switch at ON and set the B RAS and R RAS switches to OFF. A green cross hatch pattern will be displayed.
- Check the position of the projector, polarity and lens focus referring to **page 23-24.**
- Set the MODEL SELECT and SIZE SELECT switches according to the screen size.
  Set the MODEL SELECT switch to 100 for 70"– 125" projection, and to 200 for 125"– 250" projection.
  Set the SIZE SELECT switch to NORMAL for 85"– 125" and 175"– 250" projection, and to 150/72 for 70"– 85" and 125"– 175" projection.

Vertical registration of the red and green pictures

❶ Set the B RAS switch to OFF and the G RAS and R RAS switches to ON.

❷ Adjust the RV CENT control so that the red horizontal lines and the green horizontal lines converge in the middle of the screen.

❸ Adjust the RV SIZE control (and the RV LIN control, if necessary) so that the red horizontal lines and the green horizontal lines coverge at the upper and lower sides of the screen.



(Repeat steps ❷ and ❸ as necessary.)

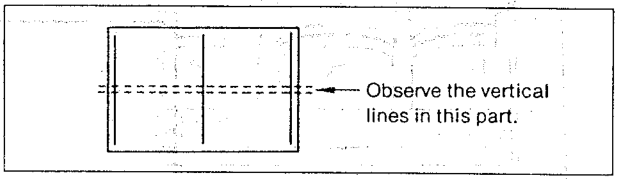
❹ Adjust the RV SKEW and RV BOW controls if the red horizontal lines and the green horizontal lines do not converge in the middle of the screen.

❺ Adjust the RV TILT-1 through TILT-4 controls so that the red horizontal lines and the green horizontal lines converge in the corners of the screen.

Horizontal registration of the red and green pictures

❻ Adjust the RH CENT control so that the red vertical lines and the green vertical lines converge in the middle of the screen.

❼ Adjust the RH SIZE control (and the RH LIN control, if necessary) so that the red vertical lines and the green vertical lines converge at the right and left sides of the screen.



(Repeat steps ❻ and ❼ as necessary.)

❽ Adjust the RH SKEW and RH BOW controls so that the red vertical lines and the green vertical lines converge in the middle of the screen.

❾ Adjust the RH TILT-1 through TILT-4 controls so that the red vertical lines and the green vertical lines converge at the corners of the screen.

Proceed to the following adjustments in the same manner as with red and green registration, setting the R RAS switch to OFF and the B RAS and G RAS switches to ON.

Vertical registration of the blue and green pictures

❿ Adjust the BV CENT control.

⓫ Adjust the BV SIZE control, and BV LIN if necessary.

⓬ Adjust the BV SKEW and BV BOW controls, if necessary.

⓭ Adjust the TILT-1 through TILT-4 controls.

Horizontal registration of the blue and green pictures

⓮ Adjust the BH CENT control.

⓯ Adjust the BH SIZE control, and BH LIN if necessary.

⓰ Adjust the BH SKEW and BH BOW controls.

⓱ Adjust the BH TILT-1 through TILT-4 controls.

When registration is complete

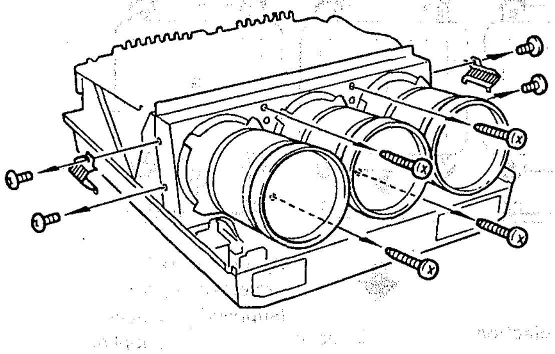
Set the switches to the following positions.
R, G, B RAS switches →ON position
BAR switch →BAR
NORM/TEST switch →NORM

Replace the top panel.

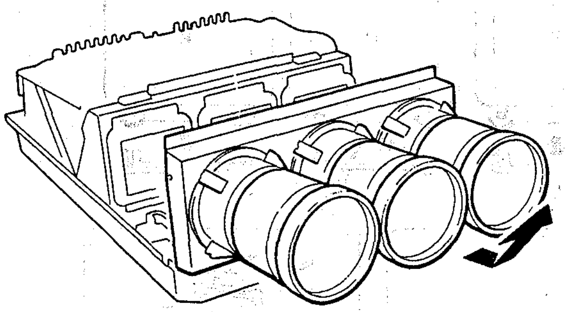
1-11. CONVERSION FOR 200"(150" – 250") PROJECTION

1 Separate the lens block from the main body.

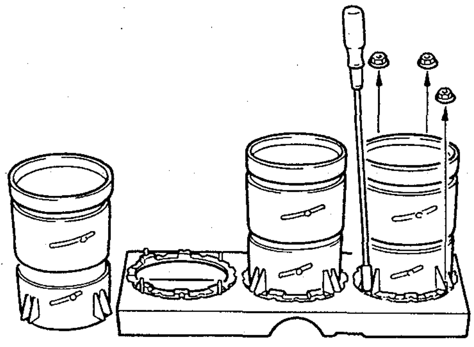
❶ Open the cabinet.
❷ Remove the 4 screws from the sides of the projector.
❸ Remove the 4 screws from the lens base.



❹ Pull the lens block out.

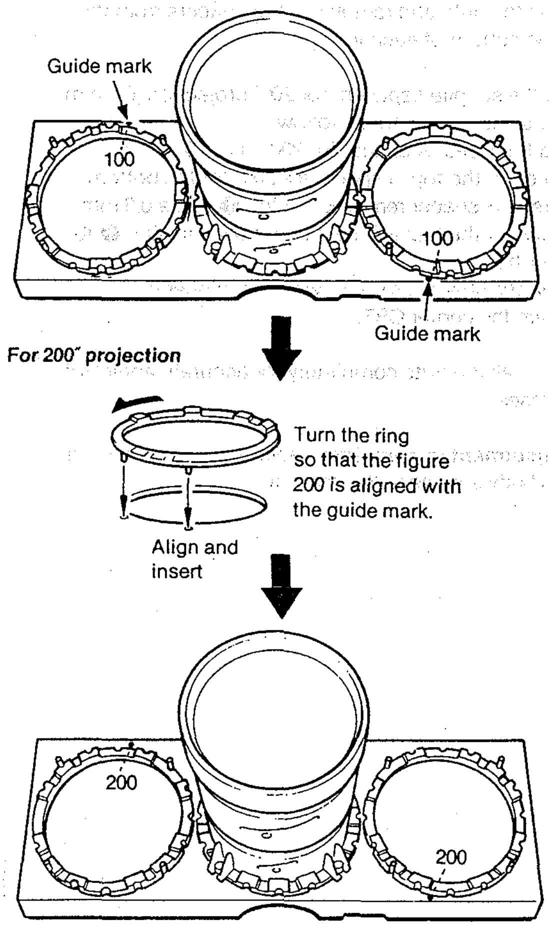


❺ Remove the 4 nuts and detach the red and blue lenses from the lens base.
Use an 8 mm nutdriver.



2 Change the positions of the lens rings.

For 100" (and 72") projection


Guide mark
100
100
Guide mark
For 200" projection
Turn the ring so that the figure 200 is aligned with the guide mark.
Align and insert
200
200

3 Adjust the mounting angles of the CRTs.

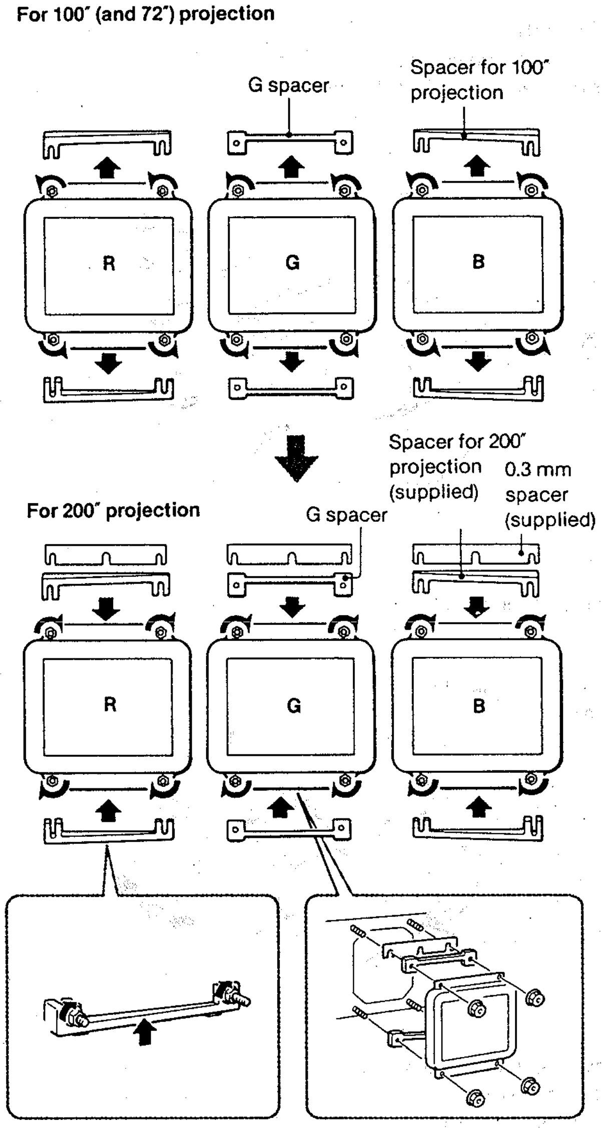
Use an 8 mm nutdriver.

❶ Loosen the nuts and remove all the spacers from the top and bottom of each lens.

❷ Insert the supplied spacers for 200" projection, 0.3 mm spacers and G spacers as follows:
R and B lenses: A spacer for 200" and a 0.3 mm spacer for the top; a spacer for 200" for the bottom
G lens: A G spacer removed in step ❶ and a 0.3 mm spacer for the top; a G spacer removed in step ❶ for the bottom
Insert the spacers for 200" with the thinner end toward the center CRT.

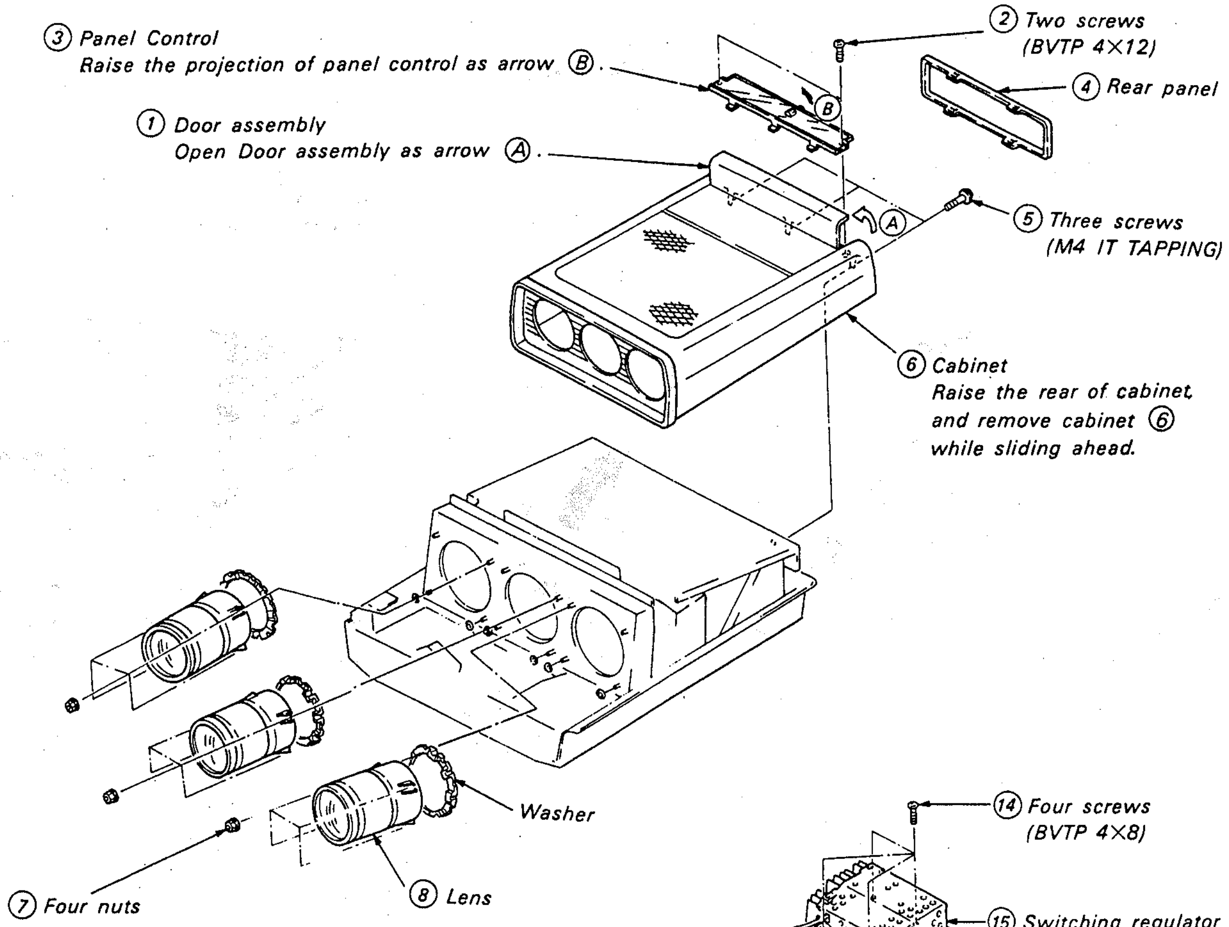
❸ Tighten, all the nuts completely for accurate angles of the lenses.

After adjsutment is complete, replace the lens block in the main body and close the cabinet.

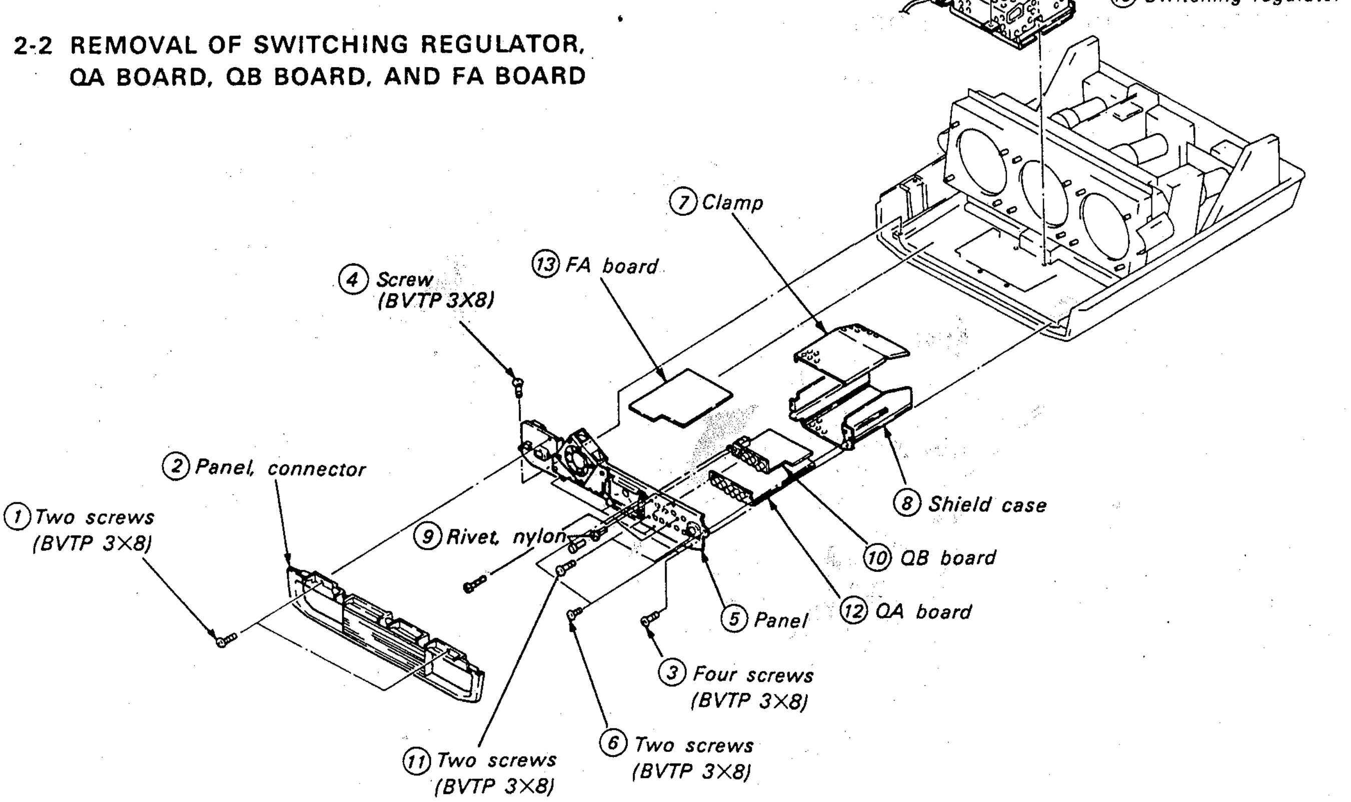

For 100" (and 72") projection
G spacer
Spacer for 100" projection
R
G
B
Spacer for 200" projection (supplied)
0.3 mm spacer (supplied)
For 200" projection
G spacer
R
G
B

SECTION 2
DISASSEMBLY

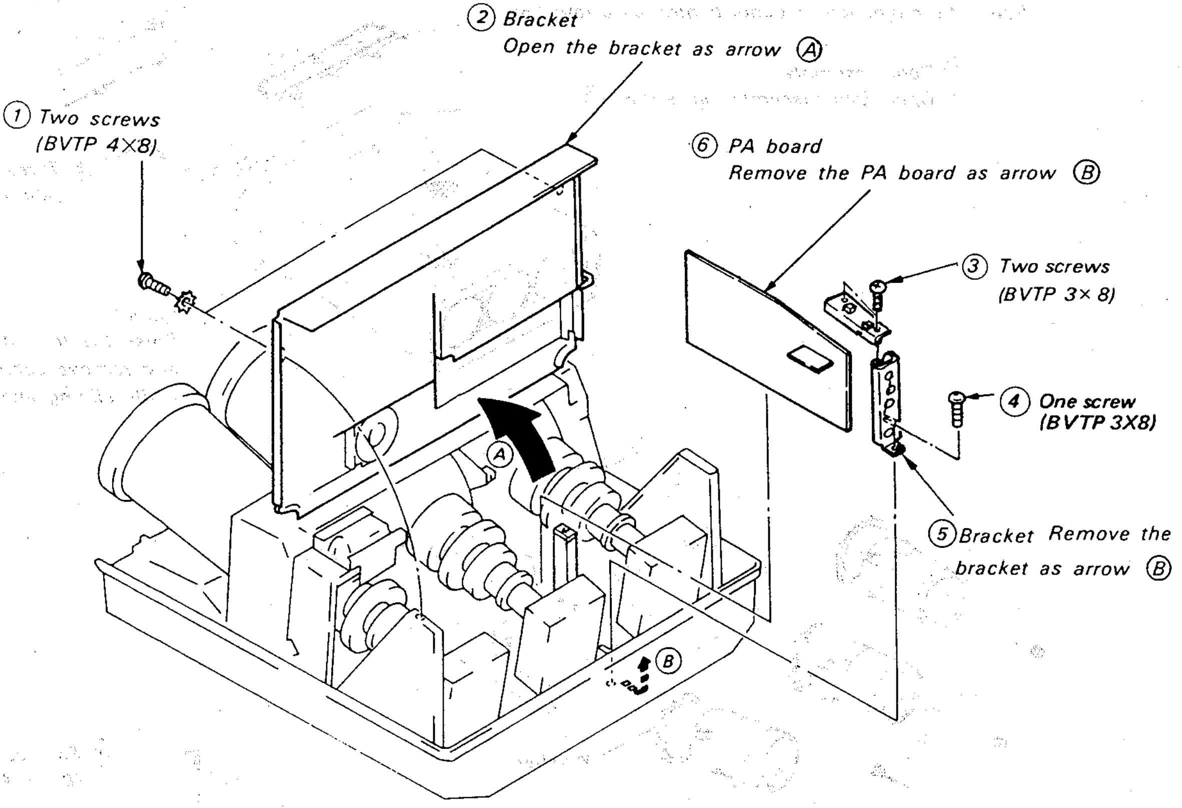
2-1. REMOVAL OF CABINET AND LENS


③ Panel Control
Raise the projection of panel control as arrow Ⓑ.
① Door assembly
Open Door assembly as arrow Ⓐ.
② Two screws
(BVTP 4×12)
④ Rear panel
B
A
⑤ Three screws
(M4 IT TAPPING)
⑥ Cabinet
Raise the rear of cabinet and remove cabinet ⑥ while sliding ahead.
Washer
⑦ Four nuts
⑧ Lens

2-2 REMOVAL OF SWITCHING REGULATOR, QA BOARD, QB BOARD, AND FA BOARD


⑭ Four screws
(BVTP 4×8)
⑮ Switching regulator
⑦ Clamp
⑬ FA board
④ Screw
(BVTP 3X8)
② Panel, connector
① Two screws
(BVTP 3×8)
⑨ Rivet, nylon
⑧ Shield case
⑩ QB board
⑤ Panel
⑫ QA board
③ Four screws
(BVTP 3×8)
⑥ Two screws
(BVTP 3×8)
⑪ Two screws
(BVTP 3×8)

2-3 REMOVAL OF PA BOARD



② Bracket
Open the bracket as arrow Ⓐ

① Two screws
(BVTP 4×8)

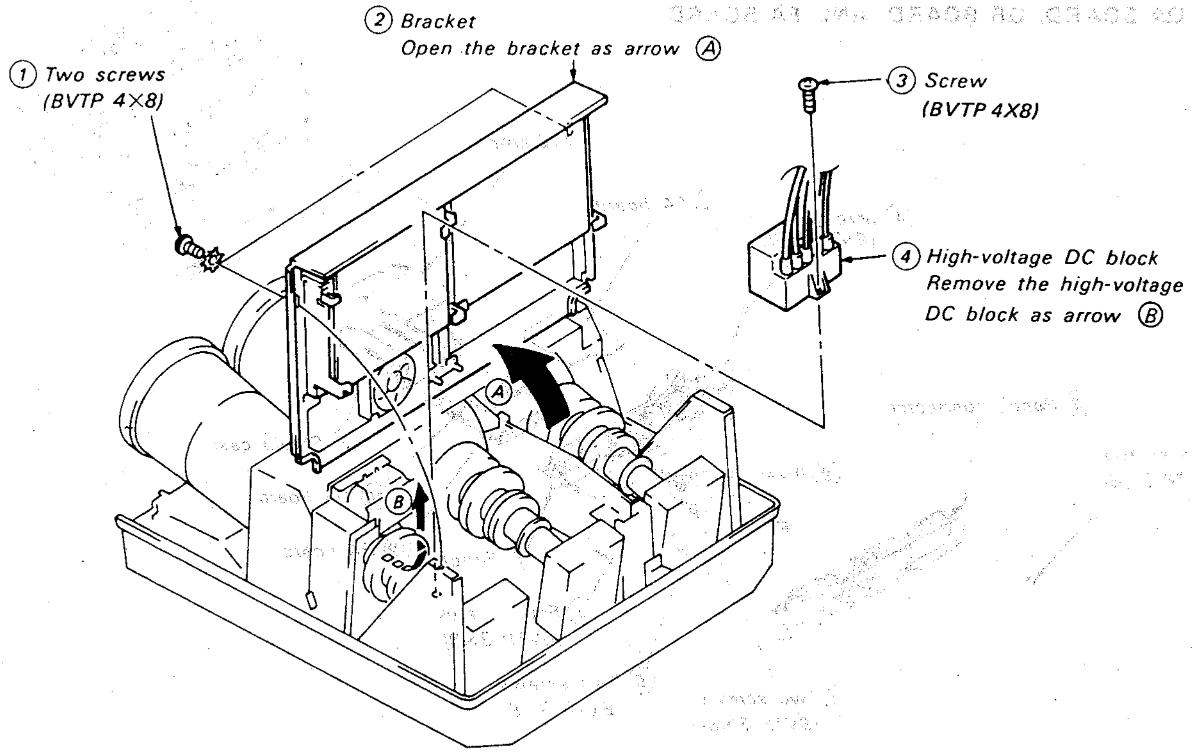
⑥ PA board
Remove the PA board as arrow Ⓑ

③ Two screws
(BVTP 3× 8)

④ One screw
(BVTP 3X8)

⑤ Bracket Remove the
bracket as arrow Ⓑ

2-4 REMOVAL OF HIGH-VOLTAGE DC BLOCK



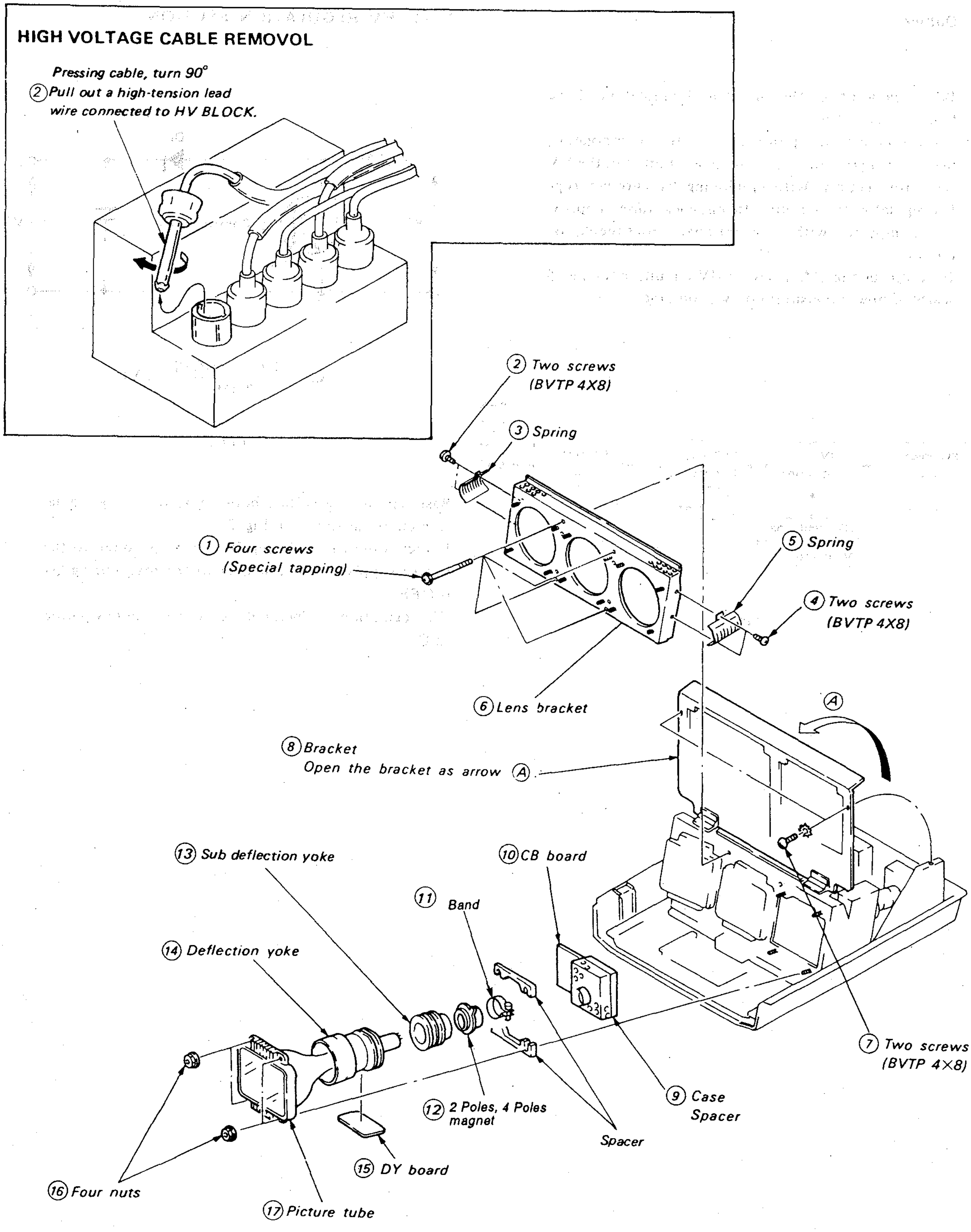
② Bracket
Open the bracket as arrow Ⓐ

① Two screws
(BVTP 4×8)

③ Screw
(BVTP 4X8)

④ High-voltage DC block
Remove the high-voltage
DC block as arrow Ⓑ

2-5 REMOVAL OF PICTURE TUBE


HIGH VOLTAGE CABLE REMOVOL
Pressing cable, turn 90°
② Pull out a high-tension lead wire connected to HV BLOCK.
② Two screws (BVTP 4X8)
③ Spring
① Four screws (Special tapping)
⑤ Spring
④ Two screws (BVTP 4X8)
⑥ Lens bracket
Ⓐ
⑧ Bracket Open the bracket as arrow Ⓐ.
⑬ Sub deflection yoke
⑩ CB board
⑪ Band
⑭ Deflection yoke
⑦ Two screws (BVTP 4×8)
⑨ Case Spacer
⑫ 2 Poles, 4 Poles magnet
Spacer
⑮ DY board
⑯ Four nuts
⑰ Picture tube

SECTION 3
CIRCUIT DESCRIPTIONS

3-1. HV REGULATION CIRCUIT

Outline

Basic operation of the circuit is amplification of the high voltage output.
Corresponding to power-up of HV components, design of high efficiency circuit is adopted in the HV regulator section. With employing B+ chopper type HV regulator, the circuit efficiency was raised approx. 8% compared with conventional series-regulation circuit.
In result, as the efficiency of HV circuit, reducing 15 watts of power consumption was obtained.

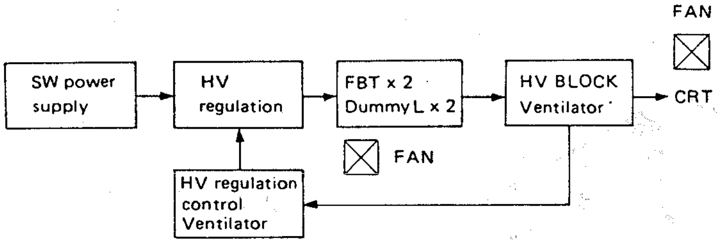
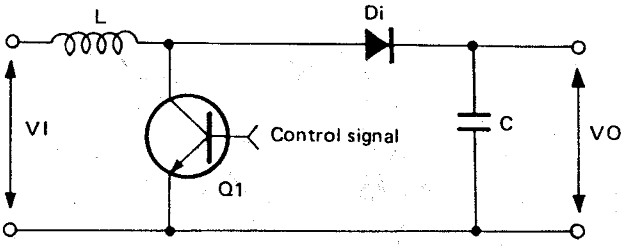

FAN
SW power supply
HV regulation
FBT x 2
Dummy L x 2
HV BLOCK
Ventilator
CRT
FAN
HV regulation control
Ventilator

Fig. 1

3-1-1. HV REGULATION SECTION


L
Di
VI
Control signal
C
VO
Q1

$$VO = \frac{T\ ON + T\ OFF}{T\ OFF} \times VI$$

Fig. 2

Basic circuit is a voltage-boost type switching regulation circuit as shown in Fig. 2.
Energy stored in L during Q1 is ON, is added to the power supply input to deliver to the load during Q1 is OFF.
HV regulation is operated by controlling ON-period of Q1.

3-1-2. HV REGULATION CONTROL SECTION

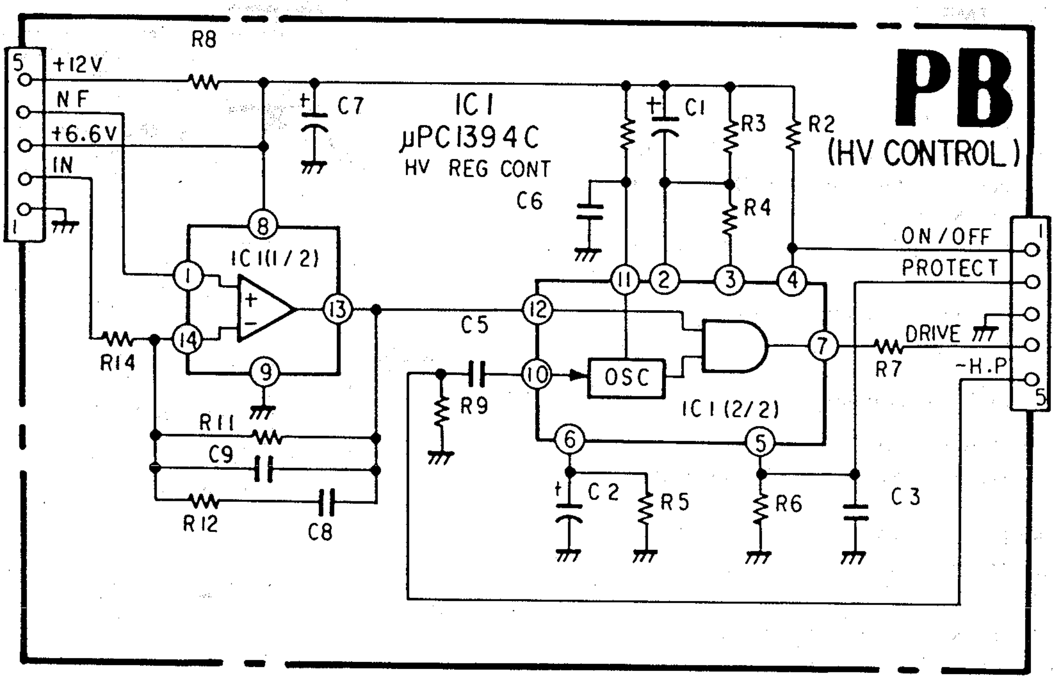

PB
(HV CONTROL)
IC1
μPC1394C
HV REG CONT
IC1(1/2)
IC1 (2/2)
OSC
+12V
NF
+6.6V
IN
ON/OFF
PROTECT
DRIVE
-H.P
R8
C7
C1
R3
R2
R4
C6
C5
R14
R9
R11
C9
R12
C8
C2
R5
R6
C3
R7
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
1
5

Fig. 3

Detected voltage from HV regulator is applied to pin ① of IC1 (μPC1394C), and reference voltage is input to pin ⑭.

If voltage of pin ① is lowered than that of pin ⑭ (decrease of HV), voltage of pin ⑬ is decreased. The output of pin ⑬ and sawtooth generated by pins ⑩ and ⑪ are voltage compared, and an output having pulse width corresponding to the voltage is delivered from pin ⑦.

In this case, the pulse width at pin ⑦ is widened. Pin ⑤ and ⑥ are cut-off circuit section which locks voltage of pin ⑦ in high level in case trouble is occurred in load.

Maximum duty time (period of ON) of output transistor is decided in pin ②.

SECTION 4

SET-UP ADJUSTMENT

Note for adjustments
For set-up adjustments, circuit adjustments, and CRT replacement, adjust with the direction yoke stuck attached the CRT.

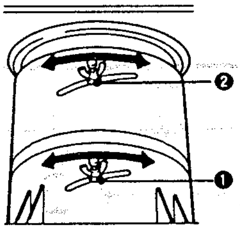
4-1. BASIC ADJUSTMENTS

Basic Adjustments
<Registration>

1) Degauss the entire chassis.
2) Set the variable resistor on the D board to mechanical center. Also, set the D board H CENT and V CENT to mechanical center.
3) Adjust the knobs and switches on the set as follows :
   BRIGHT: fully clockwise (maximum)
   PICTURE:maximum

4-2. GREEN FOCUS Adjustment

1) Receive a monoscope signal.
2) Turn off the S12 (R RAS) and S10 (B RAS) on the D board.
3) Set the GREEN lens SUB lens fully forward.
4) Rotate the MAIN lens and set for optimum focus on the screen.
5) Turn the GREEN focus VR on the focus pack and set for optimum conditions.
6) Rotate the MAIN lens for best focus in the center of the screen and temporarily tighten the lens screw.
7) Rotate the SUB lens for best focus in the center of the screen and tighten the lens screw.
8) Loosen the MAIN lens screw, fine adjust the focus, then tighten the MAIN lens screw.
9) Input a dot pattern.
10) Turn GREEN FOCUS VR (FOCUS PACK) slightly to clockwise so that focus will be off side.
11) Observe the center of screen and if dots are crooked spot, adjust the above 4 Poles magnet (see page 31) for the round spot as Fig. 1-3.
12) Adjust GREEN FOCUS VR (FOCUS PACK) to the best focus.
13) Turn GREEN FOCUS VR (FOCUS PACK) slightly counterclockwise so as to make out of focus a little bit.
14) Adjust the luminous point to be the center of the dot by 2 Poles magnet (see page 31) as Fig. 1-4.
15) Confirm the items 11) and 14) by turning GREEN FOCUS VR (FOCUS PACK) clockwise and counterclockwise centering around the best point. When the dot moves, adjust the tracking by repeating items 10) to 14).
16) Set GREEN FOCUS VR (FOCUS PACK) to the best point.



❷ Loosen the screw, slide the three ribs to adjust the focus on the corners, then tighten the screw.

❶ Loosen the screw, slide it to adjust the focus on the center, then tighten it.

Figure 1-1

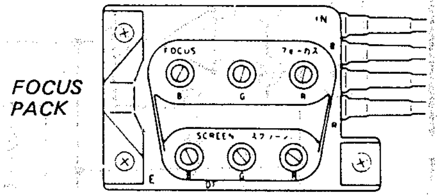


Figure 1-2

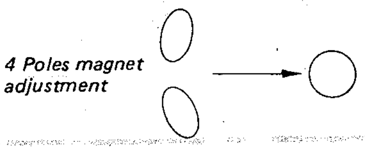


Figure 1-3

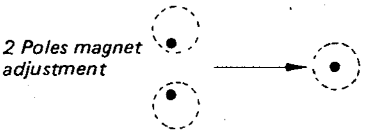


Figure 1-4

4-3. RED FOCUS Adjustment

1) Turn off the S10 (B RAS) and S11 (G RAS) on the D board.
2) Adjust in the same way as for GREEN FOCUS adjustment, steps 3) to 16).

4-4. BLUE FOCUS Adjustment

1) Turn off the S11 (G RAS) and S12 (R RAS) on the D board.
2) Adjust in the same way as for GREEN FOCUS adjustment, steps 3) to 16).
3) Receive the monoscope signal.
4) Turn BLUE VR slightly clockwise to make the upper one grid dark equally.

4-5. GREEN Picture Adjustment

1) Input a PAL monoscope signal.
2) Loosen the DY screw and adjust so that the center monoscope line is parallel to those at the left and right, then temporarily tighten the screw.
3) Loosen the SUB DY screw and adjust so that the signal moves parallel, to the left and right, when the D board GREEN H.CENT VR (RV10) is moved. then temporarily tighten the screw.
4) Adjust D board GREEN H.CENT VR (RV10) and GREEN V.CENT VR (RV5) so that the center of the monoscope signal is lined up to the screen center mark.

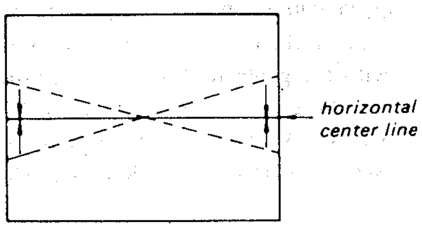


Figure 2

5) Tighten the screws after positioning the DY and SUB DY correctly.
6) Adjust D board MAIN H.SIZE VR (RV11) GREEN V.SIZE VR (RV6) and GREEN V.LIN (RV7) and perform rough size adjustment.

H SIZE (green) movement

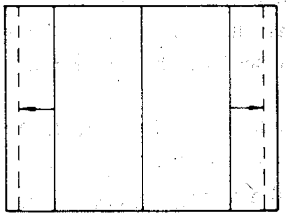


Figure 3

7) Adjust D board MIAN V.PIN VR (RV9) so that the lines at the top and bottom of the signal are almost parallel with the screen.

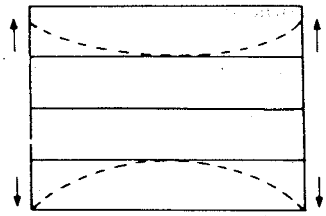


Figure 4

8) Receive an NTSC monoscope signal.
9) Adjust D board GREEN V.BOW (RV8) so that the monoscope signal horizontal center line is parallel with the screen horizontal center line, then adjust GREEN V.CENT VR (RV5) again to match up to the center line.

V.BOW (green) movement

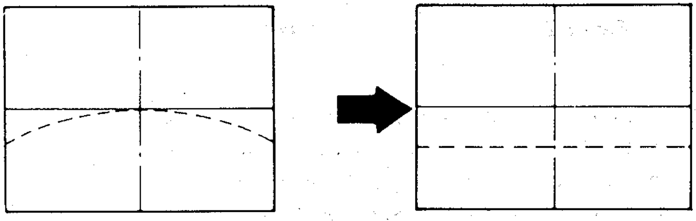


Figure 5

10) Receive a PAL monoscope signal.
11) Adjust D board GREEN V.LIN (RV7) so that the number of grids at the top and bottom of the signal are the same.

V LIN (green) movement

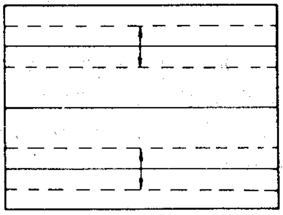


Figure 6

12) Adjust D board GREEN V.SIZE (RV6) so that there are about 11.0 grids at the top and bottom of the monoscope signal.

V SIZE (green) movement

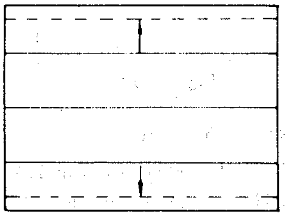


Figure 7

13) Adjust D board MAIN V.PIN (RV9) so that the top and bottom monoscope signal lines are parallel with the screen frame.
When the horizontal center line moves on turning RV9 from 0 to 100%, adjust again with PIN CENT (RV4) so as to fix the horizontal center line.
14) Line up the monoscope signal center vertical line to the screen center vertical line by adjusting D board GREEN H.SKEW (RV13) and GREEN H.CENT (RV10).

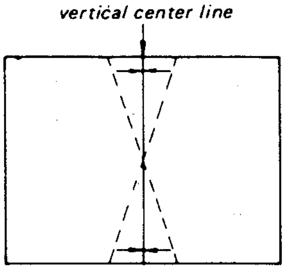


Figure 8

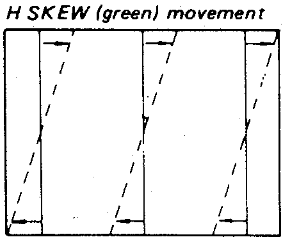


Figure 9

15) Adjust D board MAIN H.KES (RV15) and MAIN H.PIN (RV14) so that the monoscope signal left and right vertical lines are parallel with the screen.

16) Adjust D board MAIN H.SIZE (RV11) so that the number of grids to the left and right of the monoscope signal center vertical line is about 7.4 on each side.

4-6. RED DY Adjustment

1) Turn D board blue RAS SW (S10) off and project green and red.

2) Adjust D board RED V.CENT (RV16), RED V.LIN (RV18), RED H.CENT (RV25) and RED H.LIN (RV27) to line up the red and green monoscope centers.

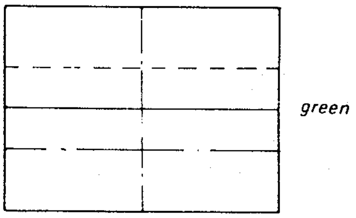


Figure 10

3) Loosen the RED DY screw.

4) Set NOR/TEST SW (S451) on the HA board to TEST, HATCH SW (S8) on the D board to HATCH.

5) Adjust D board RED V.BOW (RV20) so that the horizontal center line is straight.

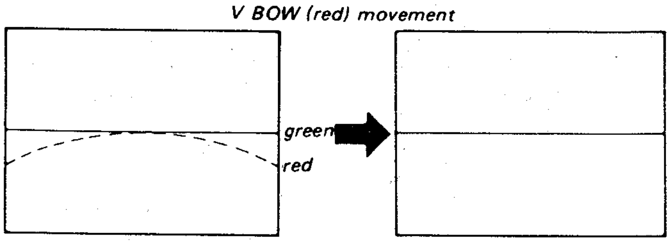


Figure 11

6) Rotate the RED DY until the horizontal center line is parallel with green, then tighten the screw.

7) Loosen the SUB DY screw, rotate the DY, and adjust so that the hatch moves parallel to the right and left, when the D board RED H.CENT VR (RV25) is moved, then tighten the screw.

4-7. TILT Adjustment

1) Set NOR/TEST SW (S451) on the HA board to TEST, HATCH SW (S8) on the D board to HATCH.

2) Line up the red horizontal center line center with the center of the green horizontal center line by adjusting D board RED V.CENT (RV16), RED V.BOW (RV20) and RED V.SKEW (RV19).

3) Line up the red top and bottom horizontal lines with the green top and bottom horizontal lines by adjusting D board RED V.SIZE (RV17) RED V.LIN (RV18) and RED V.SKEW (RV19).

4) Set the RED V.TILT VR's 1-4 as shown below.

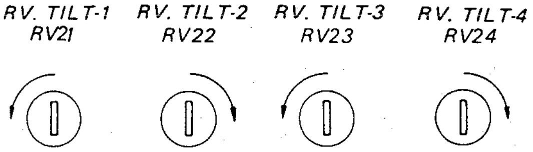


Figure 12

5) Set HA board NOR/TEST SW (S451) to NORMAL.

6) Receive an all-white signal.

7) Check that the red or green luminescent line can not be seen on the screen horizontal center line.
If it is visible, adjust D board KEYS CENT VR (RV3) until it disappears.

8) Set the RED V.TILT VR's 1-4 to mechanical center.

9) Set NOR/TEST SW (S451) on the HA board to TEST, HATCH SW (S8) on the D board to HATCH.

10) Adjust RED and BLUE V.SKEW (RV19, RV37) until the top and bottom horizontal green and red lines match (minimum distortion balanced evenly at all four corners).

4-8. G-R H. REGISTRATION Adjustment

1) Adjust D board RED H.BOW (RV29) so that the RED vertical center line is straight.

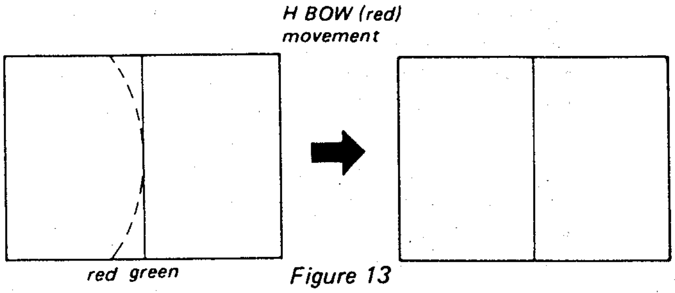


Figure 13

2) Adjust D board RED H.SKEW (RV28) so that the RED vertical center line is parallel to the green vertical center line.

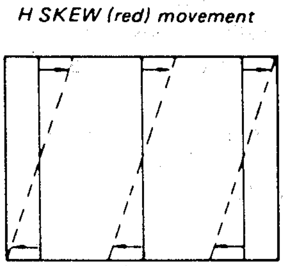


Figure 14

3) Adjust D board RED H.CENT (RV25) so that the RED and GREEN vertical center lines match up.

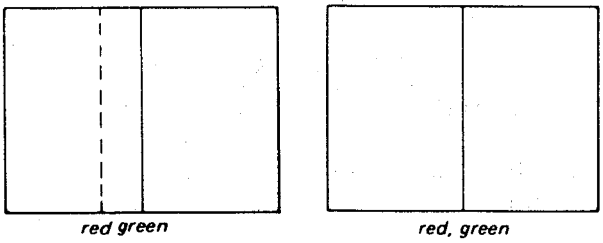


Figure 15

4) Adjust E board RED H.SIZE (L6) and D board RED H.LIN (RV27) so that the centers of the RED left and right vertical lines match up to the centers of the green left and right vertical lines.

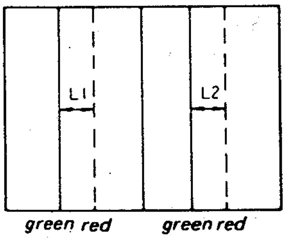


Figure 16

(1) Adjust L6 (H SIZE (R)) on E board so that the red and green vertical lines overlap at the left and right sides on the screen, or so that L1 and L2 are the same distances, and adjust RV27 (RED H LIN) so that the red and green vertical lines overlap at the left and right sides of the screen.

Note: Make the RV26 (H.SIZE) and RV44 (BLUE H.SIZE) to the mechanical center. Don't turn these volumes except for the actual installation.

4-9. G-R TILT Adjustment

1) Set D board HATCH SW (S8) to HATCH.
2) Adjust D board RED V.TILT-1 (RV21) and line up the RED upper left horizontal line to green.
3) Adjust D board RED V.TILT-2 (RV22) and line up the RED upper right horizontal line to green.
4) Adjust D board RED V.TILT-3 (RV23) and line up the RED lower left horizontal line to green.
5) Adjust D board RED V.TILT-4 (RV24) and line up the RED lower right horizontal line to green.
6) Adjust D board RED H.TILT-1 (RV30) and line up the RED upper left vertical line to green.
7) Adjust D board RED H.TILT-2 (RV31) and line up the RED upper right vertical line to green.
8) Adjust D board RED H.TILT-3 (RV32) and line up the RED lower left vertical line to green.
9) Adjust D board RED H.TILT-4 (RV33) and line up the RED lower right vertical line to green.

4-10. BLUE DY Adjustment

1) Set the HA board NOR/TEST SW (S451) to NORMAL and receive a monoscope signal.
2) Turn the D board RED RAS SW (S12) off and turn the BLUE RAS SW (S10) on.
3) Line up the BLUE monoscope signal center to green center by adjusting D board BLUE V.CENT (RV34), BLUE V.LIN (RV36), BLUE H.CENT (RV43) and BLUE H.LIN (RV45).
4) Loosen BLUE DY screw.
5) Set D board HATCH SW (S8) to HATCH.
6) Adjust D board BLUE V.BOW (RV38) so that the center horizontal line is straight.
7) Adjust BLUE DY so that the horizontal center line is parallel to green, then tighten the DY screw.
8) Loosen the SUB DY screw and rotate to adjust so that the hatch moves parallel to the left and right when D board BLUE H.CENT VR (RV43) is moved, then tighten the screw.

4-11. G-B V. REGISTRATION Adjustment

1) Line up the blue horizontal center line to the green horizontal center line by adjusting D board BLUE V.CENT (RV34). BLUE V.BOW (RV38) and BLUE V.SKEW (RV37).
2) Adjust D board BLUE V.SIZE (RV35) and BLUE V.LIN (RV36) so that the centers of the blue top and bottom horizontal lines match up to the centers of the green top and bottom horizontal lines.

4-12. G-B H. REGISTRATION Adjustment

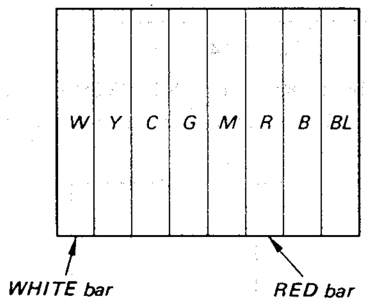
1) Adjust D board BLUE H.BOW (RV47) so that the blue vertical center line is straight.
2) Adjust D board BLUE H.SKEW (RV46) so that the blue vertical center line is parallel to the green vertical center line.
3) Adjust D board BLUE H.CENT (RV43) so that the blue vertical center line matches up to the green vertical center line.
4) Adjust E board BLUE H.SIZE (L8) and D board BLUE H.LIN (RV45) so that the centers of left and right blue vertical lines match up to the centers of the green left and right vertical lines.

4-13. G-B TILT Adjustment

1) Line up the top left BLUE horizontal line to green by adjusting D board BLUE V.TILT-1 (RV39).
2) Line up top right BLUE horizontal line to green by adjusting D board BLUE V.TILT-2 (RV40).
3) Line up bottom left BLUE horizontal line to green by adjusting D board BLUE V.TILT-3 (RV41).
4) Line up bottom right BLUE horizontal line to green by adjusting D board BLUE V.TILT-4 (RV42).
5) Line up top left BLUE vertical line to green by adjuting D board BLUE H.TILT-1 (RV48).
6) Line up to right BLUE vertical line to green with D board BLUE H.TILT-2 (RV49).
7) Line up bottom left BLUE vertical line to green with D board BLUE H.TILT-3 (RV50).
8) Line up bottom right BLUE vertical line to green with D board BLUE H.TILT-4 (RV51).

4-14. White Balance Adjustment

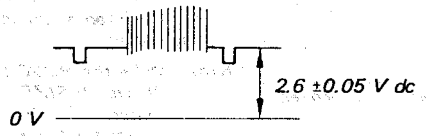
1) Receive the color bar signal from the pattern generator, and make the black and white screen by putting off the chroma off switch on the pattern generator.
2) ● R. DRIVE VR 80%
   ● G. DRIVE VR ...... MAX
   ● B. DRIVE VR ...... MAX
3) Turn the focus pack RED, GREEN and BLUE G2 (SCREEN) VR to minimum.
4) ● PICTURE VR .... MIN
   ● BRIGHTNESS VR ... mechanical center
5) Adjust the focus pack GREEN G2 (SCREEN) VR so that RED bar is bright dimly.
6) Set the BRIGHTNESS VR to minimum.
7) Adjust the white balance with the RED and BLUE G2 (SCREEN) VR.
   * Adjust WHITE bar position
8) Set the PICTURE VR and BRIGHTNESS VR to maximum.
9) Adjust the white balance by turning the RED DRIVE VR on the BB board.
   * Adjust WHITE bar position



10) Repeat items 3) to 9) when the white is not balanced.

4-15. SUB-BRIGHT Adjustment

1) Receive the cross hatch signal from the pattern generator.
2) Make the BRIGHT VR to the mechanical center.
3) Connect an oscilloscope to TP8 on BB board. (GND: Shield case.)
4) Adjust with RV4 (SUB BRIGHT) so that the black dc level becomes 2.6 ±0.05 V dc.



SECTION 5
SAFETY RELATED ADJUSTMENTS

5-1. PA AND PC BOARD ADJUSTMENTS

- *When replacing the following components, make the HV HOLD DOWN adjustment. (◘ R38, R39)*
  PA board complete
  R15, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, C30, D16, D22, Q10, IC2 } *PA board*
- *When replacing the following components, make the HV REG adjustment. (◘R48, R49)*
  PA board complete
  R31, R32, R33, R34, R46, R47, R48, R49, R82, R83, R84, C3, C39, C56, L2, D17, Q14, IC1 } *PA board*
  PB board mount
  R3, R4, R7, R14, IC1 } *PB board*
- *When replacing the following components, make the BEAM CURRENT PROTECTOR adjustment. (◘R23)*
  PA board complete
  R16, R18, R19, R20, R21, R22, R23, R50, R51, R52, R53, R54, R69, D15, D20, Q9, Q11, Q12, IC3 } *PA board*
- *When replacing the following components, make the OVER VOLTAGE PROTECTOR adjustment. (◘R88, R89)*
  PA board complete
  R18, R85, R86, R87, R88, R89, D18, IC1 . . . PA board.

(OTHER)
HVR, FBT1, FBT2, L1, L2, C1, C2

◘ *R38, R39 HV HOLD DOWN ADJUSTMENT*

1. *Confirm that the power switch is in OFF position.*
2. *Disconnect RED anode-lead-wire from HV-DC block and instead connect the positive lead of the electrostatic voltmeter, and the negative lead to the ground lug of RED CRT.*

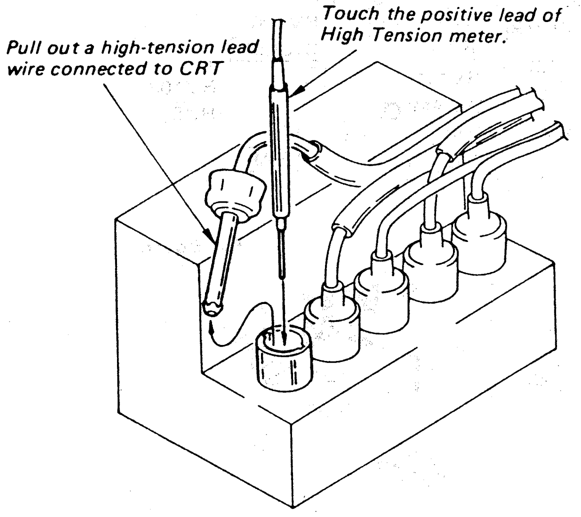

Pull out a high-tension lead wire connected to CRT
Touch the positive lead of High Tension meter.

Fig. 1

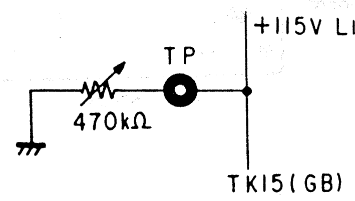
3. *Feed in a monoscope pattern from a signal generator, and maximize PICTURE and BRIGHT.*
4. *Confirm AC power supply voltage to be 120V.*
5. *Confirm that HV HOLD DOWN circuit operates and raster disappears when reading of the electrostatic voltmeter is less than 34.30 kV.*

◘ *R48, R49, HV REG ADJUSTMENT*

1. *Confirm that the power switch is in OFF position.*
2. *Disconnect RED anode-lead-wire from HV-DC block and instead connect the positive lead of the electrostatic voltmeter, and the negative lead to the ground lug of RED CRT.*
3. *Feed in a monoscope pattern from a signal generator, and power supply voltage AC120V.*
4. *Set the user's control R.G.B. RASTER SW to OFF and R.G.B G2 VR (Focus Pack) to minimum.*
5. *Confirm that reading of the high-tension meter is less than 33.30 kV when the power switch is turned on.*

◘ *R88, R89 O.V.P ADJUSTMENT*

1. *Receive a monoscope signal and turn the BRIGHT and PICTURE controls for maximum.*
2. *Supply 120V ac to with variable auto-transformer.*
3. *Connect a 470 kΩ variable VR to one side of GB board TP and one side of ground.*



4. *Adjust VR (470kΩ) for B+ Line is less than 125V DC, the O.V.P circuit opeates and the raster disappears.*
5. *If the specification is not met, adjust R88, R89 and repeat steps 4 until satisfied.*

◘ *R23 BEAM CURRENT PROTECTOR ADJUSTMENT*

1. *Confirm that the power switch is in OFF position.*
2. *Disconnect RED anode-lead-wire from HV-DC Block and instead connect the positive lead of the electrostatic voltmeter, and the negative lead to the ground lug of RED CRT.*
3. *Install the tool to the PC-1 connector on the PC board and connect an ammeter.*
4. *Short-circuit between emitter and collector of Q12 on PA board.*
5. *Turn PICTURE, BRIGHT and R.G.B. G2 VRs (Focus Pack), and then confirm that protector circuit operates and raster disappears when ABL current is less than 3500 μA.*
6. *Remove the short-circuit between emitter and collector of Q12 on PA board and instead short-circuit between emitter and collector of Q11 and make the adjustment of 5.*
7. *Remove the short-circuit between emitter and collector of Q11 on PA board.*

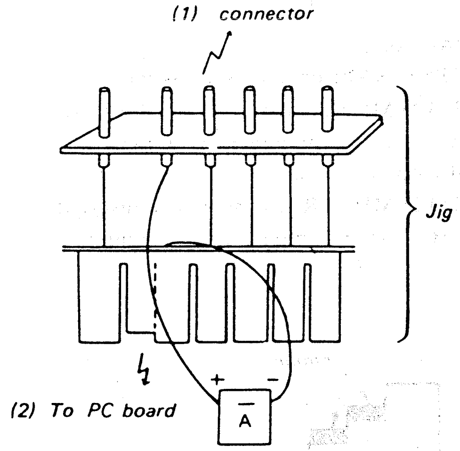
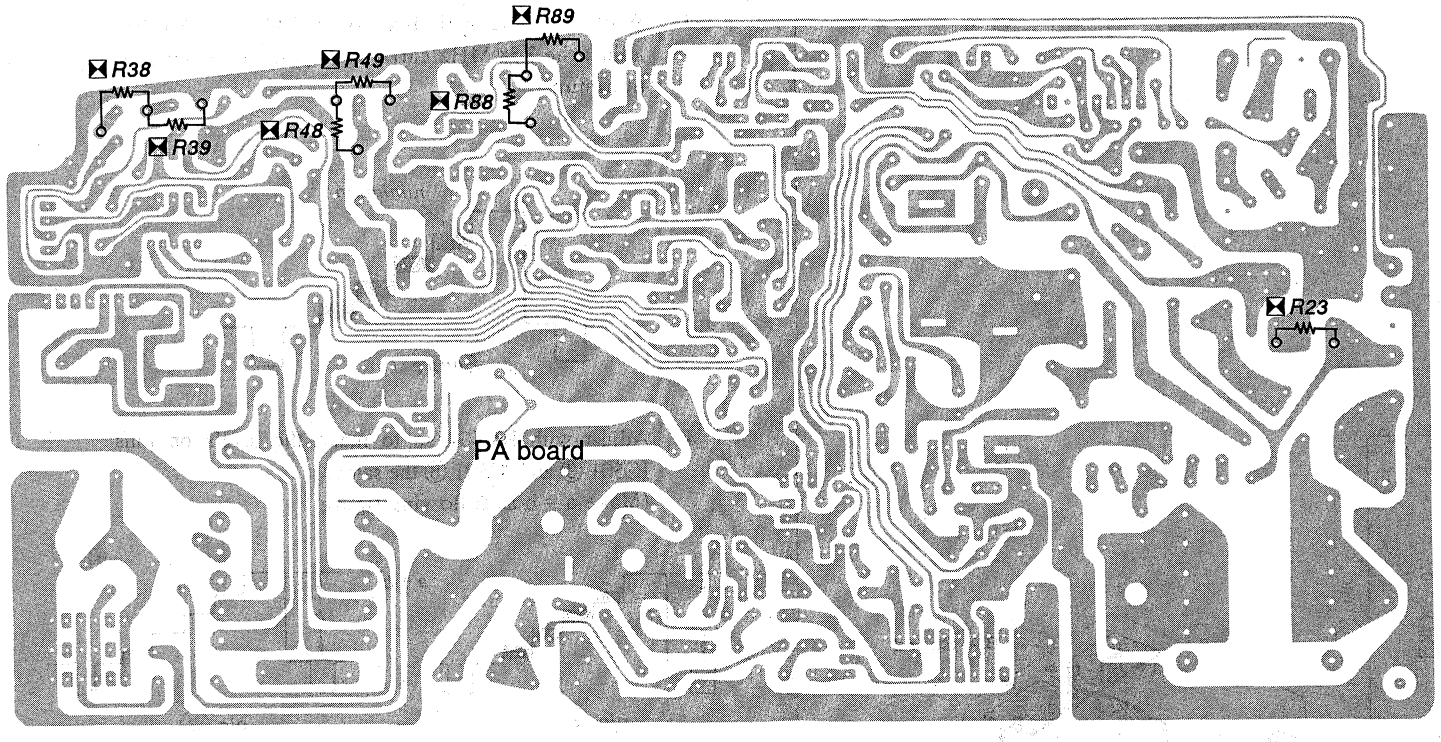
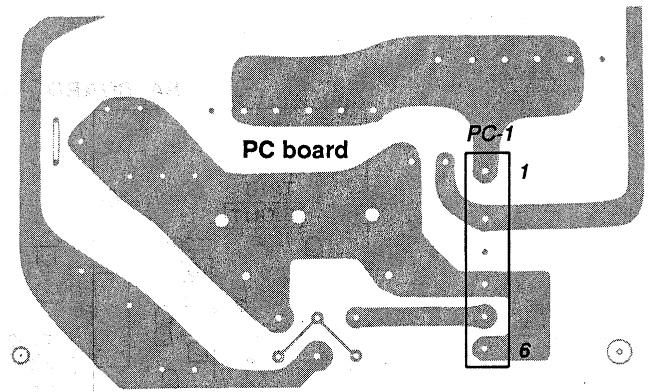


Fig. 2



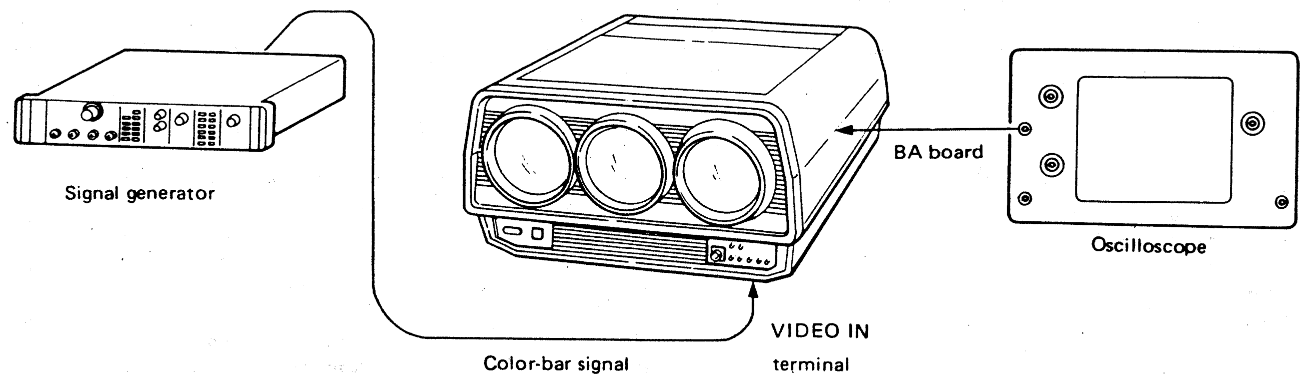


SECTION 6
CIRCUIT ADJUSTMENTS

6-1. BA BOARD ADJUSTMENTS

• CONNECTION

Note for adjustments
For set-up adjustments, circuit adjustments, and CRT replacement, adjust with the direction yoke stuck attached the CRT.


Signal generator
BA board
Oscilloscope
Color-bar signal
VIDEO IN
terminal

Y. TRAP (T102, T103)

1. Input a PAL color bar.
2. Observe TP5 (TRAP) on the oscilloscope.
3. Turn T103 (4.43 MHz TRAP) core and adjust so that the 4.43 MHz carrier component is minimum.
4. Input a SECAM color bar.
5. Turn T102 (4.25 MHz TRAP) core and adjust so that the 4.25 MHz carrier component is minimum.

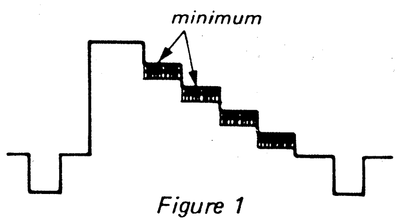
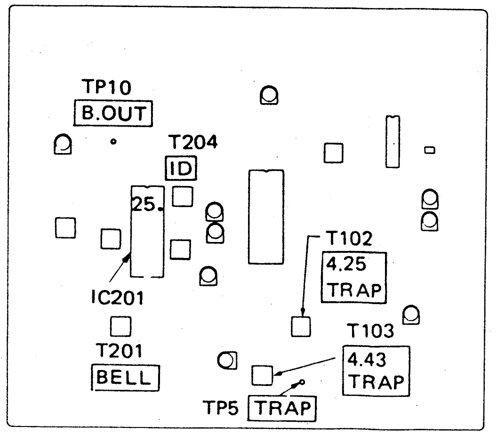


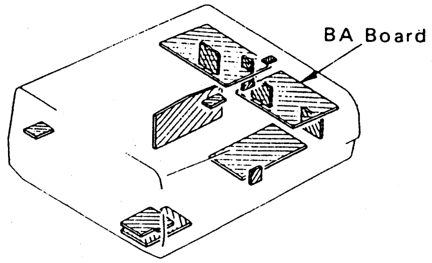
Figure 1

SECAM COLOR (T201, T204)

1. Receive a SECAM color bar signal.
2. Turn T204 (ID) core so that IC201 pin ㉕ DC level is maximum.
3. While observing the blue output TP10 (B.OUT) waveform, adjust T201 (BELL FILTER) so that the output waveform peak portions are flat. (Figure 2)

BA BOARD


TP10
B.OUT
T204
ID
25
IC201
T201
BELL
TP5
TRAP
T102
4.25
TRAP
T103
4.43
TRAP



DISCRI ADJUSTMENT (T202, T203)

1. Adjust T203 (B-Y DISCRI) so that the blue output TP10 waveform valleys are the same level.
2. Adjust T202 (R-Y DISCRI) so that red output TP8 (R.OUT) waveform valleys are the same level. (Figure 2)
3. After completing 1 and 2, fine adjust so that color components do not appear in the color bar black portion and white portion.

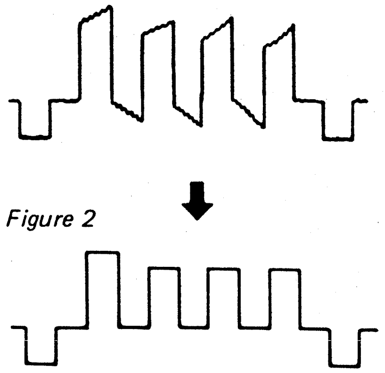


Figure 2

NTSC 3.58 1H COMB AND Y LEVEL ADJUSTMENTS (T401, RV403)

1. Input an NTSC 3.58 color bar.
2. Observe TP5 (TRAP) on the oscilloscope.
3. White tracking with BA board T401 and RV403, adjust the 3.58 MHz carrier component so that it is minimum.

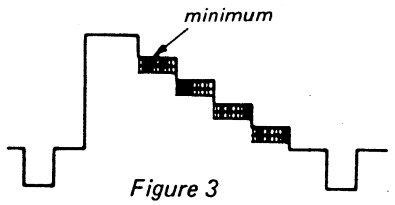
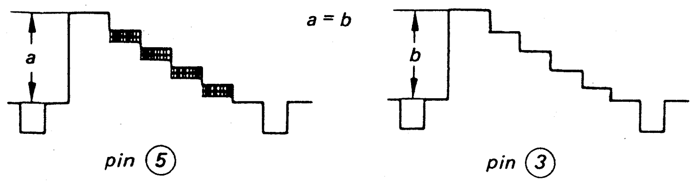


Figure 3

4. Adjust with RV404 so to make the levels on pins IC501 ③ and IC501 ⑤ the same.
(Make a = b as following figure.)


a
a = b
b
pin ⑤
pin ③

COLOR ADJUSTMENT (RV108, RV111)

1. Input a SECAM color bar.
2. Set the COLOR VR to center.
3. Adjsut RV111 (SECAM SUB COLOR) so that blue output TP10 (B.OUT) is as shown in Figure 4.
4. Input a PAL color bar and adjust RV108 (PAL SUB COLOR) so that blue output is as shown in Figure 4. COLOR VR center=6V DC

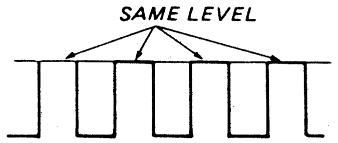
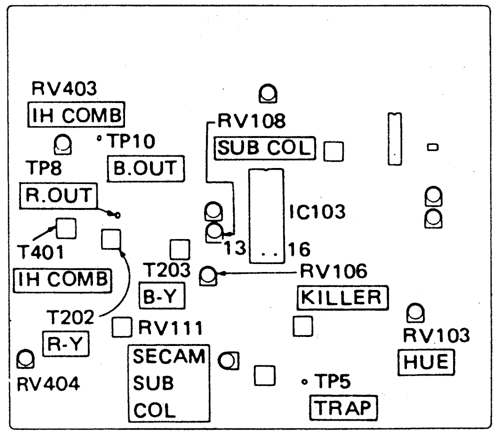


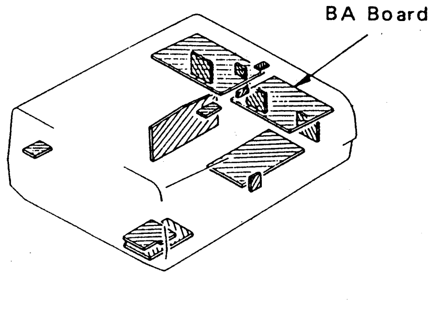
Figure 4

HUE CENTER (RV103)

1. Input a Color Pattern (SPCB).
2. Set COLOR VR to center.
3. Turn RV103 (HUE CENT) so that blue output and red output ANTI-PAL signals stop. At this time, confirm th that there is almost no color in the picture ANTI-PAL signal portion.
4. Input an NTSC color bar, turn the HUE VR and confirm HUE optimum position and that there is sufficient HUE variable range.

BA BOARD


RV403
IH COMB
RV108
SUB COL
TP10
TP8
B.OUT
R.OUT
IC103
T401
IH COMB
13
16
T203
B-Y
RV106
KILLER
T202
R-Y
RV111
SECAM
SUB
COL
RV404
TP5
TRAP
RV103
HUE



KILLER ADJUSTMENT (RV106)

1. Receive the NTSC black and white signal.
2. Cut the burst signal off by connecting the electrolytic capacitor 10 μF/16 V between pin ⑯ of IC103 and GND.
3. Adjust with RV106 (KILLER) so that the voltage on pin ⑬ of IC103 becomes 8.0 ±0.1 V dc.

PAL COLOR SYNC ADJUSTMENT (RV104, RV105)

1. Input a PAL color bar.
2. Connect 100 kΩ resistor between IC103 pin ⑬ and ground and release killer.
3. Connect 10 μF/16V electrolytic capacitor between IC103 pin ⑯ and ground and cut the burst signal.
4. Connect IC104 pin ② to the +12V line via a 2.2 kΩ resistor and get 4.43 MHz mode.
5. Adjust RV104 (APC-2 4.43 MHz) to get color sync. And adjust B.OUT. (Figure 5)
6. Remove the 2.2 kΩ resistor in step 4.
7. Input an NTSC color bar.
8. Ground Q144 base momentarily and get 3.58 MHz mode.
   (Repeat two or three times if it does not change the first time.)
9. Adjust RV105 (APC-1 3.58 MHz) to get color sync. And adjust B.OUT. (Figure 6)

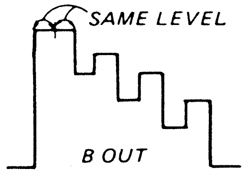

SAME LEVEL
B OUT

Figure 5

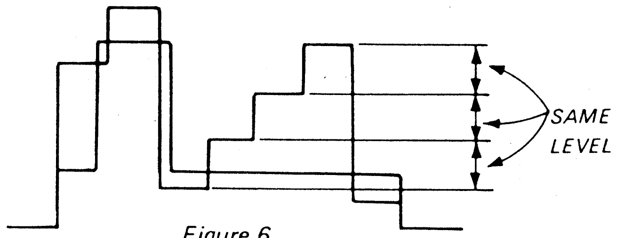


Figure 6

SUB PIC ADJUSTMENT (RV107)

1. Input a PAL color bar.
2. Set COLOR VR to minimum.
3. Adjust RV107 (SUB PIC) so that the blue output TP10 (B.OUT) is 0.85±0.05Vp-p. from the

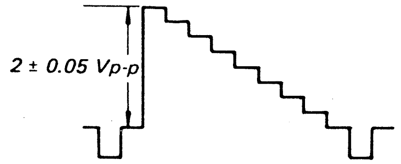


Figure 7

PAL MATRIX (T104, RV110)

1. Input a PAL color bar.
2. Observe blue output TP10 (B.OUT) and red output TP8 (R.OUT) waveforms.
3. Set COLOR VR to center.
4. While tracking with T104 (DAT) and RV110 (DELAY ADJ VR), adjust so that blue output TP10 (B.OUT) and red output TP8 (R.OUT) waveforms are both as shown in Figure 8.
5. Fine adjust 6. HUE CENTER after completing the adjustment.

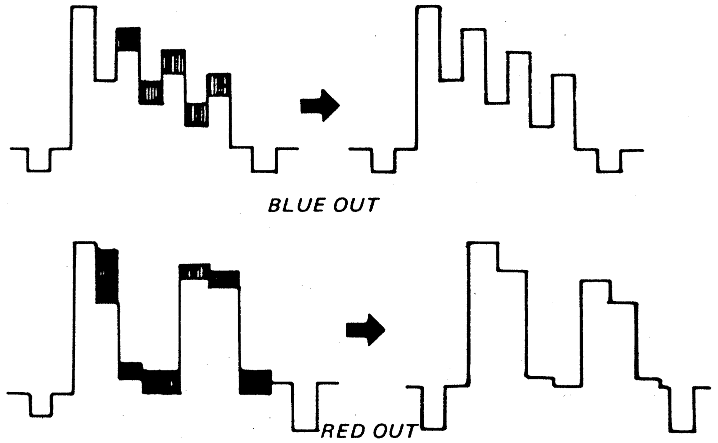
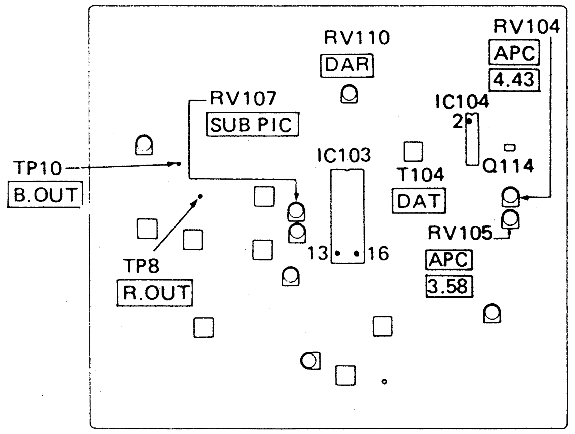
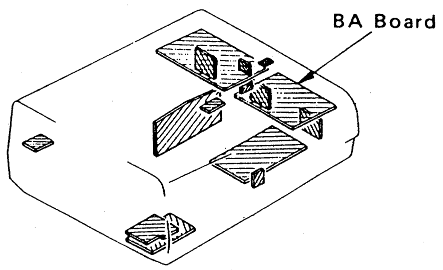

BLUE OUT
RED OUT

Figure 8

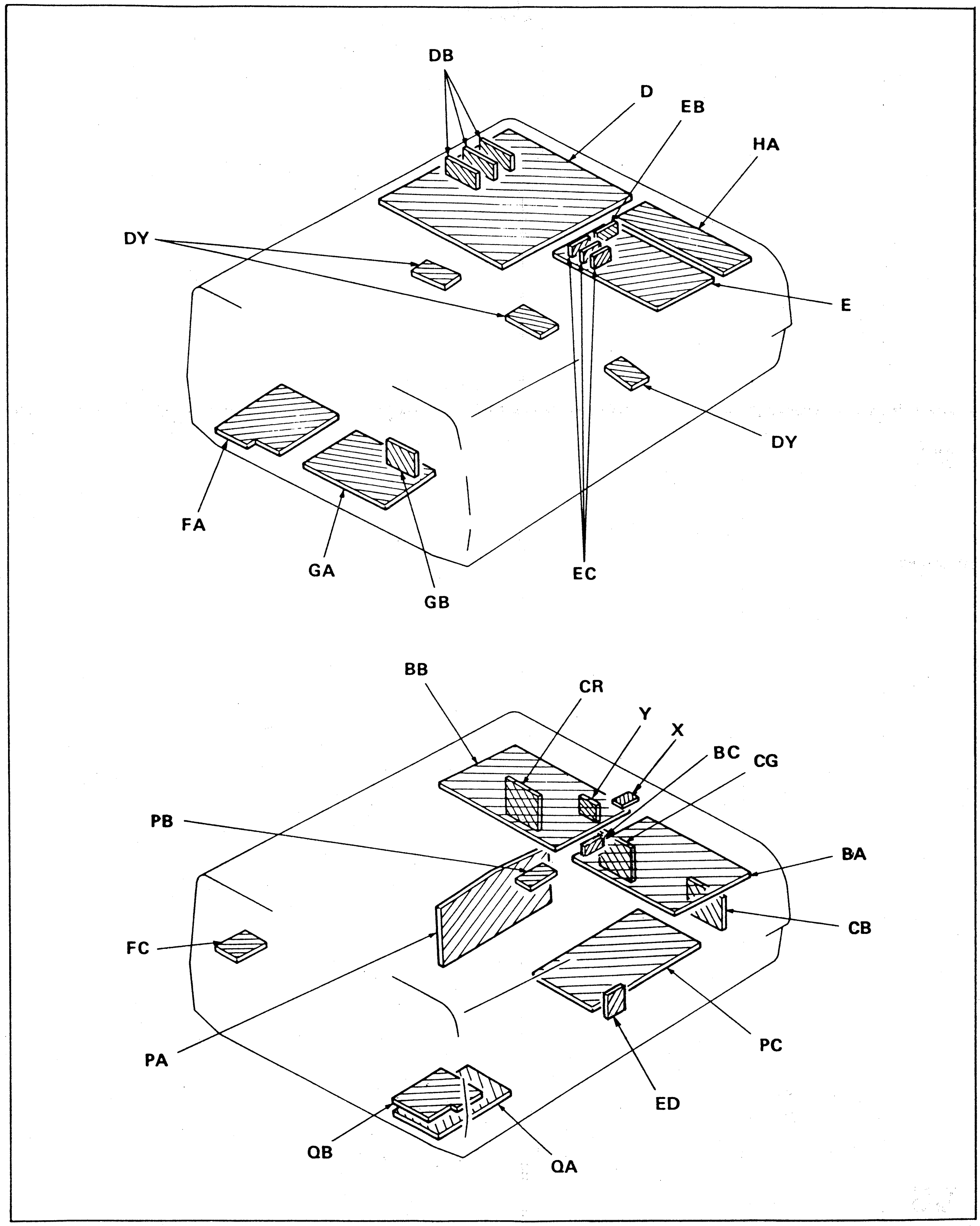
BA BOARD


RV110
DAR
RV104
APC
4.43
RV107
SUB PIC
IC104
2
IC103
Q114
TP10
B.OUT
T104
DAT
RV105
APC
3.58
TP8
R.OUT
13
16



SECTION 7
DIAGRAMS

7-1. CIRCUIT BOARDS LOCATION


DB
D
EB
HA
DY
E
DY
FA
GA
GB
EC
BB
CR
Y
X
BC
CG
PB
BA
CB
FC
PA
PC
ED
QB
QA

put
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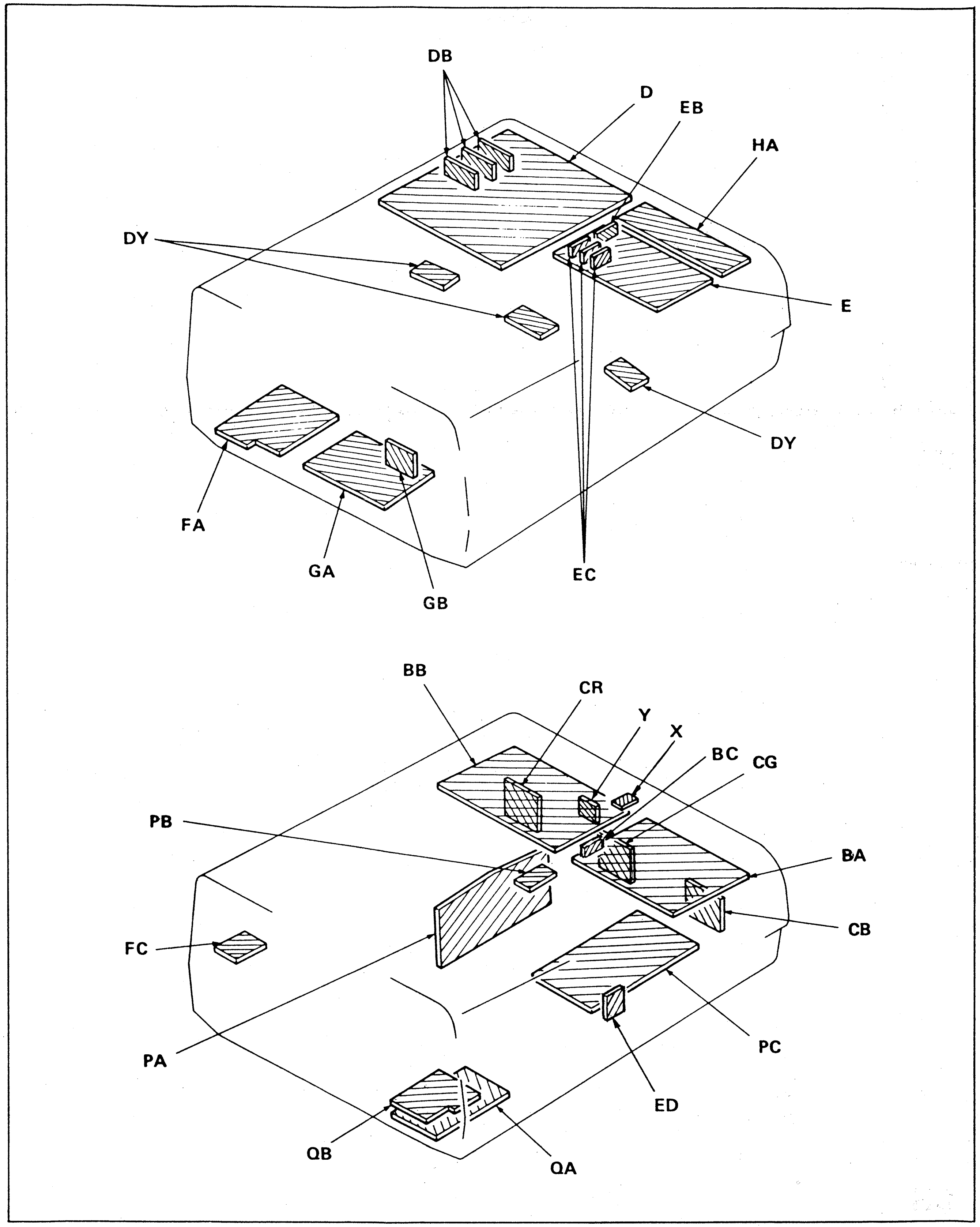
110
put
JT)

ing

Board

SECTION 7
DIAGRAMS

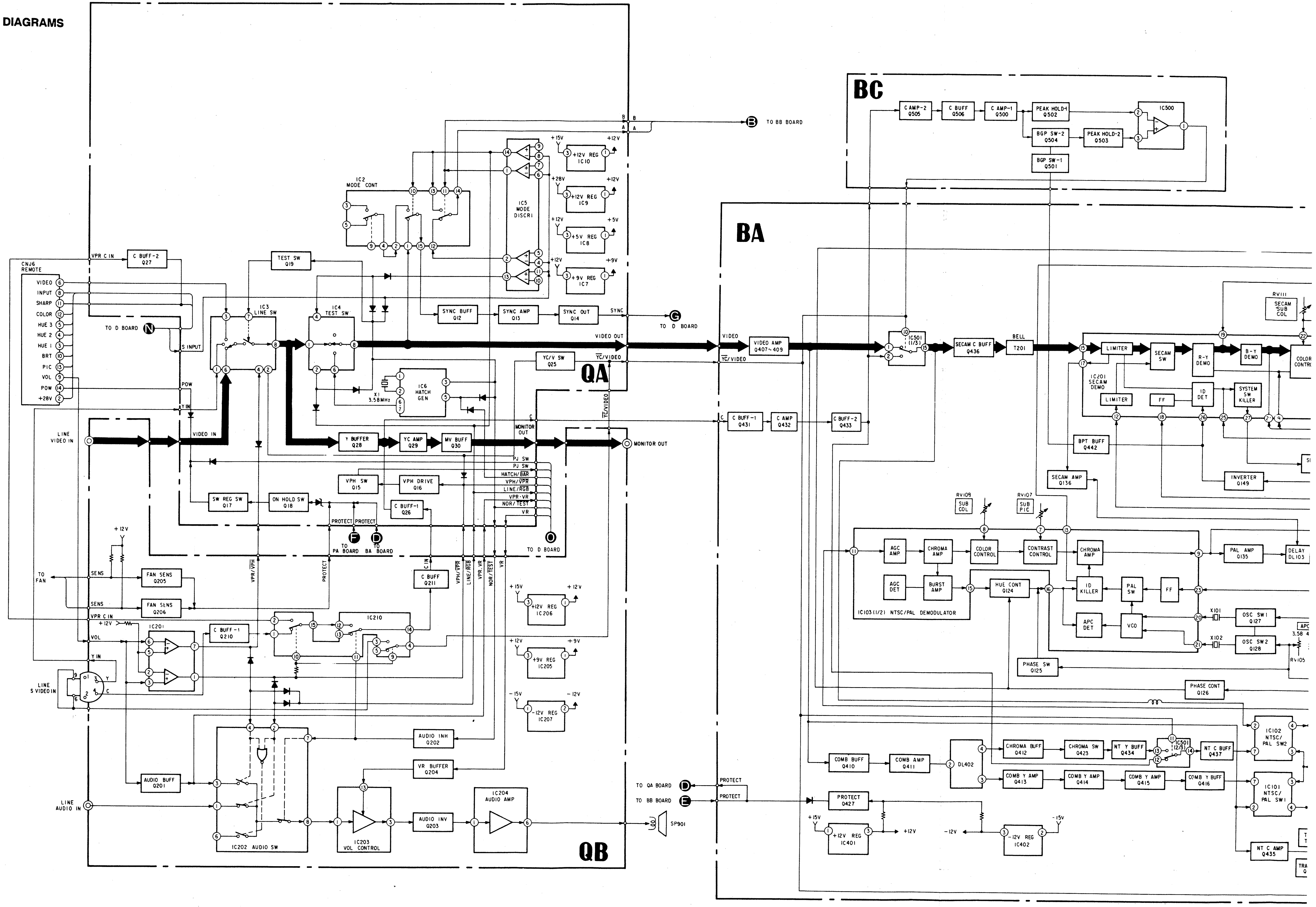
7-1. CIRCUIT BOARDS LOCATION

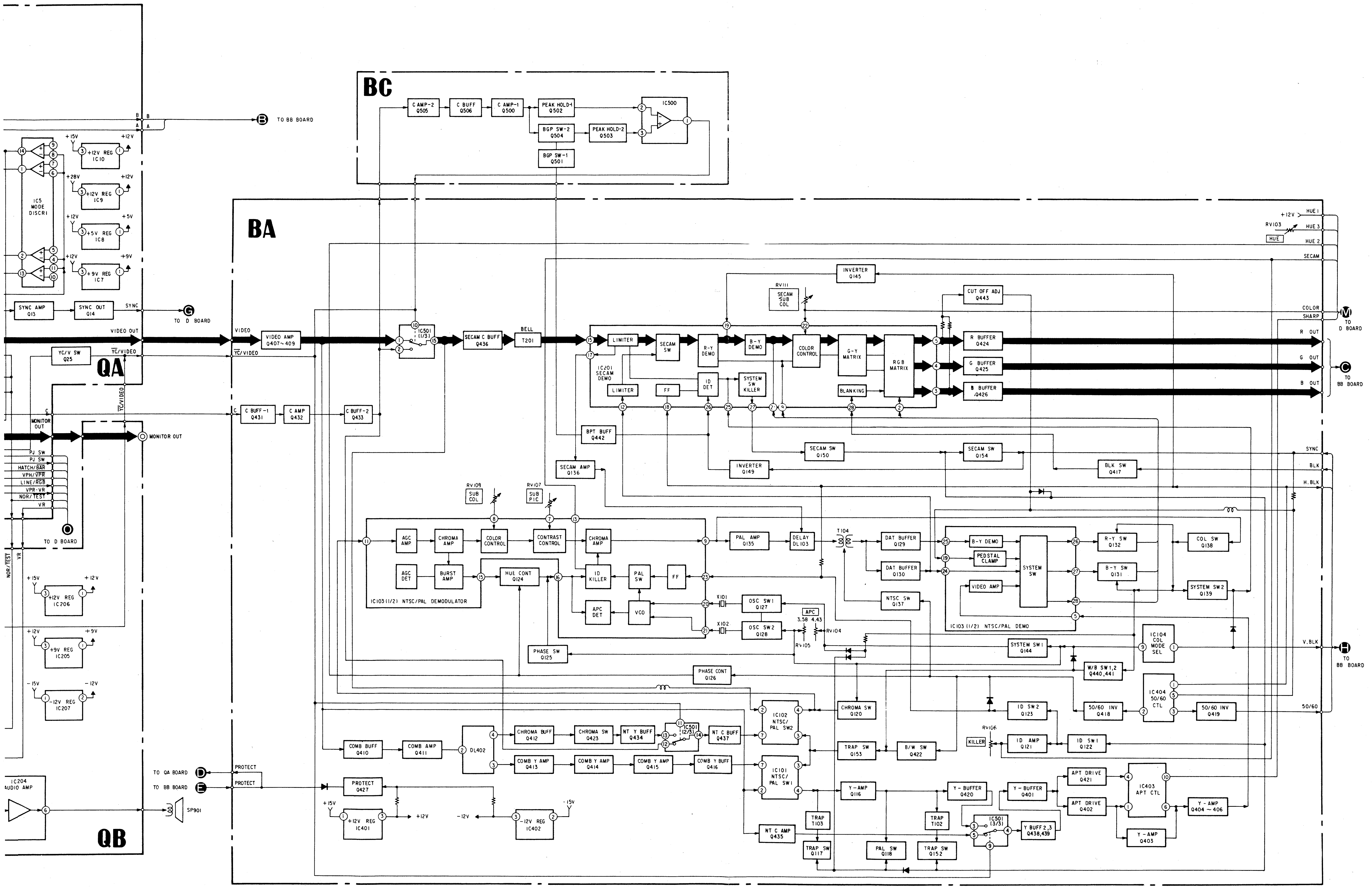


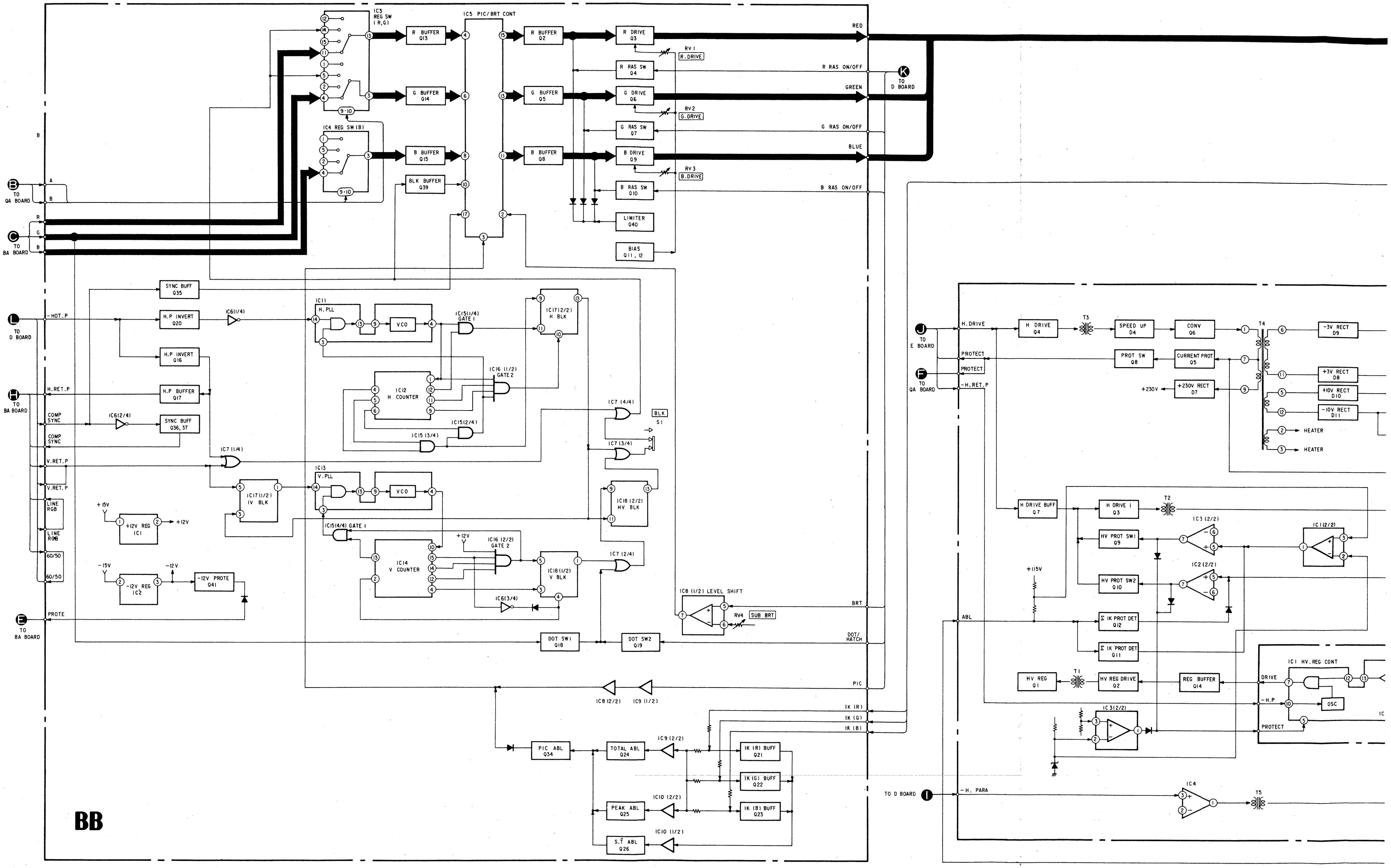
7-2. QUICK REFERENCE

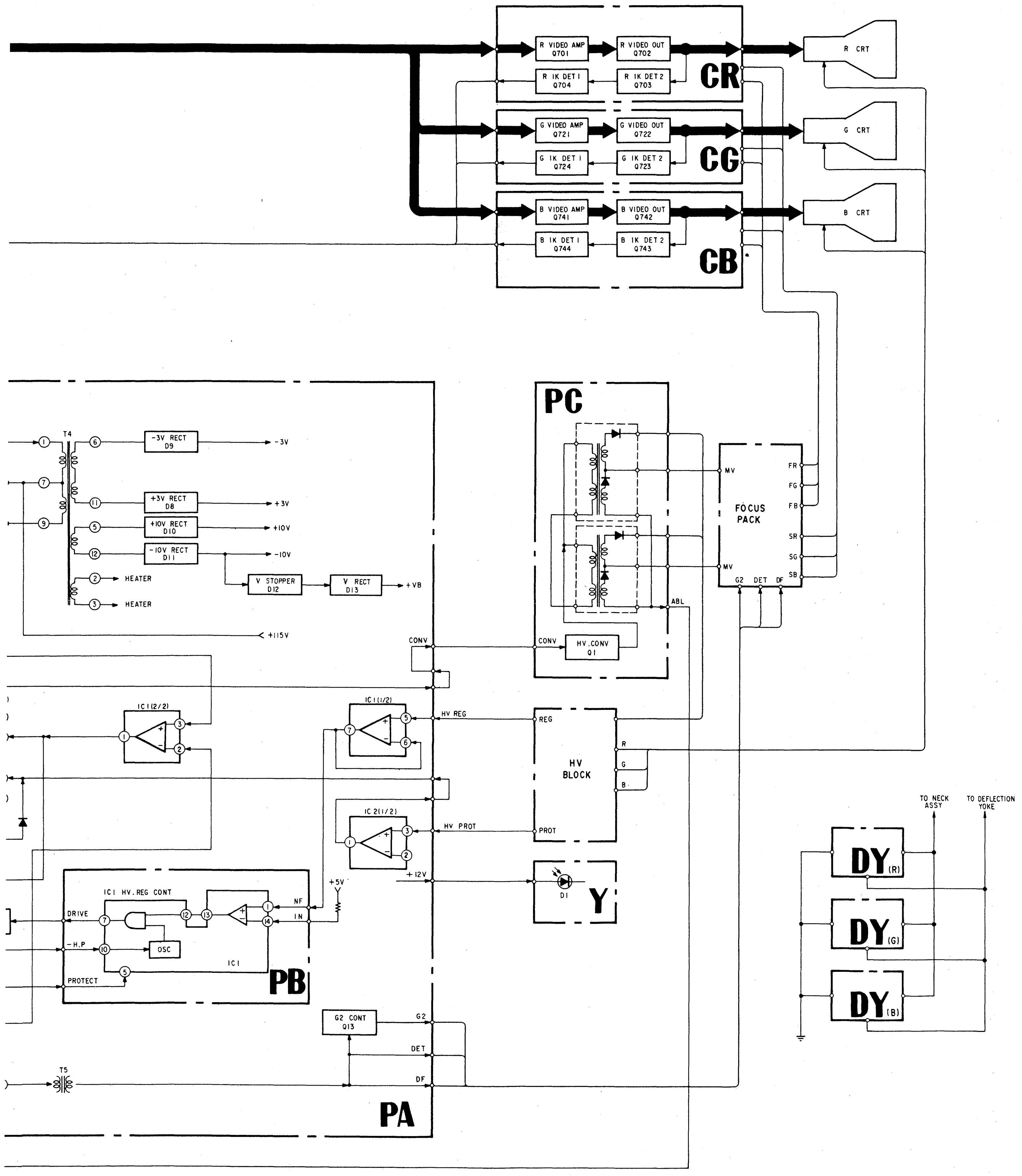
BOARD / SECTION	BA	BB	BC	CB	CG	CR	D	DB	DY	E	EB
CIRCUIT DESCRIPTION	–	–	–	–	–	–	–	–	–	–	–
ADJUSTMENTS	41	38	–	–	–	–	34	–	–	–	–
BLOCK DIAGRAM	47	49	47	51	51	51	54	56	51	53	53
MOUNTING DIAGRAM	93	101	94	104	103	103	68	69	83	81	81
SCHEMATIC DIAGRAM	86	96	86	99	99	99	71	74	80	76	76
ELECTRICAL PARTS LIST	117	115	123	131	130	130	133	138	131	132	133
BOARD / SECTION	**EC**	**ED**	**FA**	**FC**	**GA**	**GB**	**HA**	**PA**	**PB**	**PC**	**QA**
CIRCUIT DESCRIPTION	–	–	–	–	–	–	–	–	33	–	–
ADJUSTMENTS	–	–	–	–	–	–	–	39	–	39	–
BLOCK DIAGRAM	53	53	53	53	53	53	54	50	50	51	46
MOUNTING DIAGRAM	81	82	108	108	–	–	84	82	82	84	65
SCHEMATIC DIAGRAM	77	77	105	105	106	106	80	78	78	78	62
ELECTRICAL PARTS LIST	133	133	126	126	–	–	138	123	125	125	127
BOARD / SECTION	**QB**	**X**	**Y**								
CIRCUIT DESCRIPTION	–	–	–								
ADJUSTMENTS	–	–	–								
BLOCK DIAGRAM	46	55	51								
MOUNTING DIAGRAM	67	85	85								
SCHEMATIC DIAGRAM	61	80	80								
ELECTRICAL PARTS LIST	126	139	139								

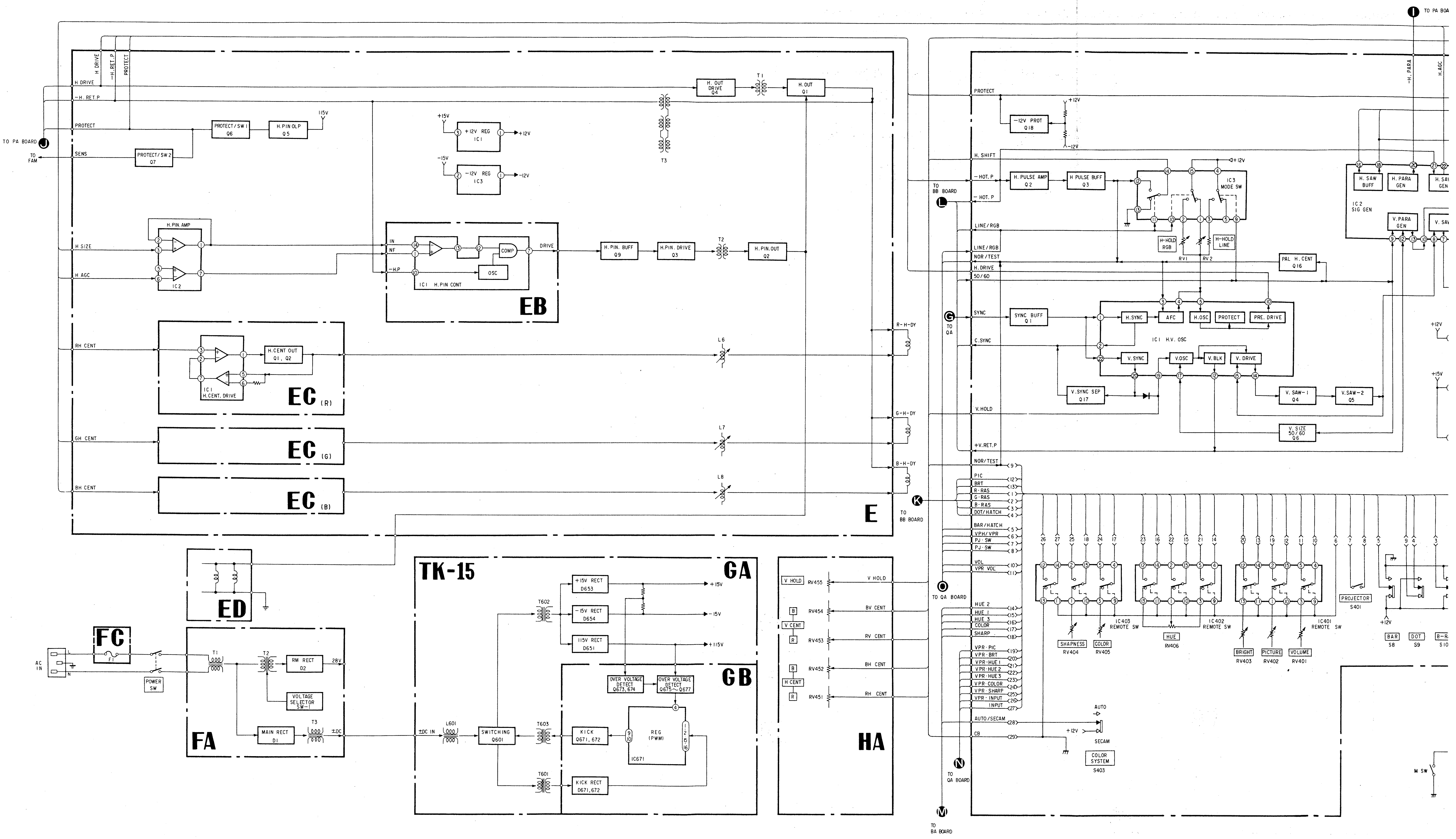
7-3. BLOCK DIAGRAMS

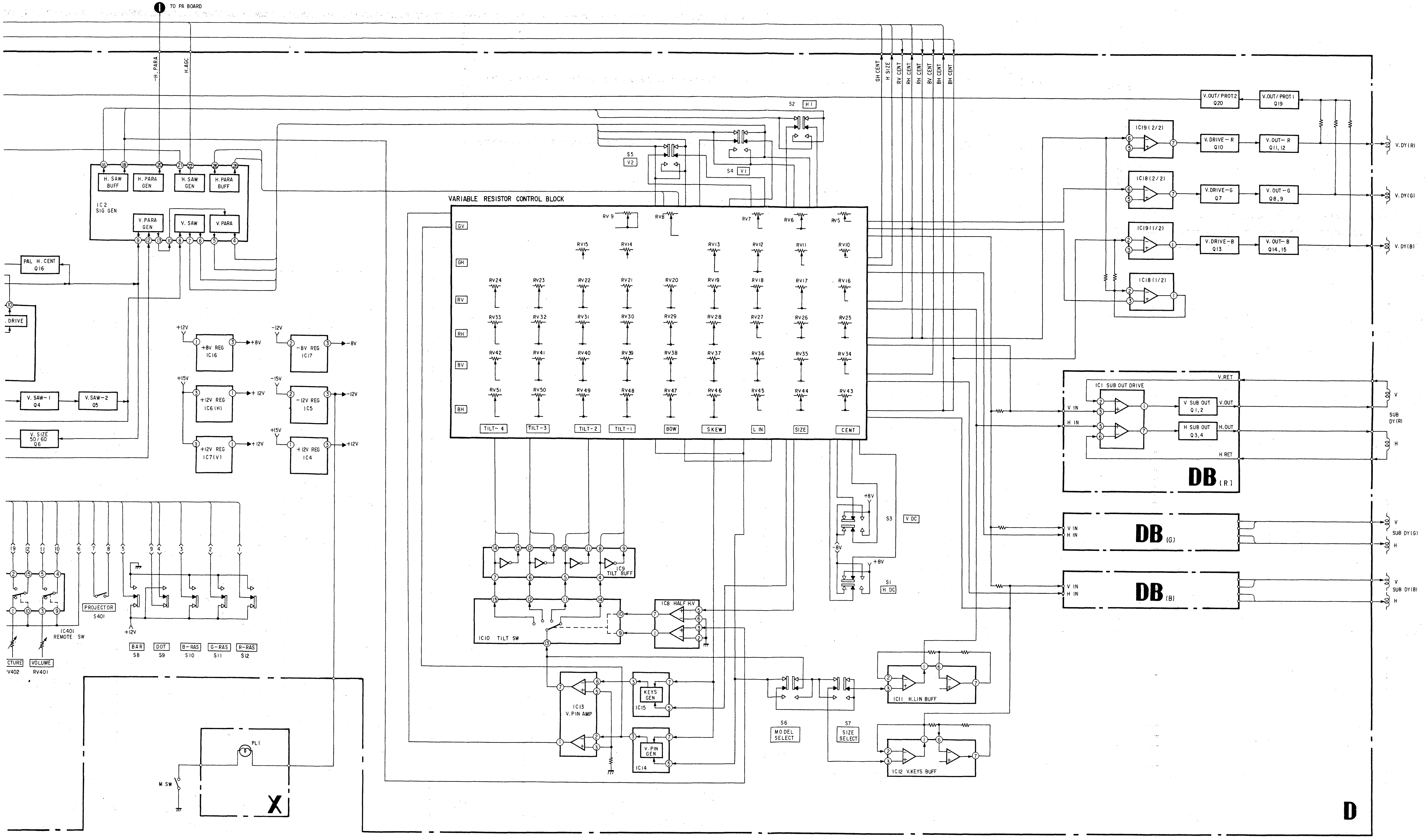

QA
QB
BA
BC
CNJ6 REMOTE
VIDEO
INPUT
SHARP
COLOR
HUE 3
HUE 2
HUE 1
BRT
PIC
VOL
POW
+28V
VPR C IN
C BUFF-2 Q27
TO D BOARD
S INPUT
Y IN
LINE VIDEO IN
VIDEO IN
TEST SW Q19
IC3 LINE SW
IC4 TEST SW
IC2 MODE CONT
IC5 MODE DISCRI
+12V REG IC10
+12V REG IC9
+5V REG IC8
+9V REG IC7
+15V
+28V
+12V
+5V
+9V
SYNC BUFF Q12
SYNC AMP Q13
SYNC OUT Q14
SYNC
TO D BOARD
TO BB BOARD
VIDEO OUT
YC/V SW Q25
YC/VIDEO
IC6 HATCH GEN
X1 3.58MHz
Y BUFFER Q28
YC AMP Q29
MV BUFF Q30
MONITOR OUT
PJ SW
HATCH/BAR
VPH/VPR
LINE/RGB
VPR·VR
NOR/TEST
VR
VPH SW Q15
VPH DRIVE Q16
C BUFF-1 Q26
SW REG SW Q17
ON HOLD SW Q18
PROTECT
TO PA BOARD
TO BA BOARD
TO D BOARD
TO FAN
SENS
FAN SENS Q205
FAN SENS Q206
C BUFF Q211
C IN
VPR/VPH
+12V REG IC206
+9V REG IC205
-12V REG IC207
-15V
-12V
IC201
IC210
C BUFF-1 Q210
VOL
LINE S VIDEO IN
LINE AUDIO IN
AUDIO BUFF Q201
AUDIO INH Q202
VR BUFFER Q204
IC202 AUDIO SW
IC203 VOL CONTROL
AUDIO INV Q203
IC204 AUDIO AMP
SP901
TO QA BOARD
TO BB BOARD
C AMP-2 Q505
C BUFF Q506
C AMP-1 Q500
PEAK HOLD-1 Q502
BGP SW-2 Q504
PEAK HOLD-2 Q503
BGP SW-1 Q501
IC500
VIDEO
VIDEO AMP Q407~409
IC501 (1/3)
SECAM C BUFF Q436
BELL
T201
LIMITER
SECAM SW
R-Y DEMO
B-Y DEMO
COLOR CONTR
IC201 SECAM DEMO
ID DET
SYSTEM SW KILLER
FF
RV111 SECAM SUB COL
C BUFF-1 Q431
C AMP Q432
C BUFF-2 Q433
BPT BUFFER Q442
SECAM AMP Q136
INVERTER Q149
RV109 SUB COL
RV107 SUB PIC
AGC AMP
CHROMA AMP
COLOR CONTROL
CONTRAST CONTROL
AGC DET
BURST AMP
HUE CONT Q124
ID KILLER
PAL SW
APC DET
VCO
PAL AMP Q135
DELAY DL103
IC103 (1/2) NTSC/PAL DEMODULATOR
X101
X102
OSC SW1 Q127
OSC SW2 Q128
APC
3.58
RV105
PHASE SW Q125
PHASE CONT Q126
COMB BUFF Q410
COMB AMP Q411
DL402
CHROMA BUFF Q412
CHROMA SW Q423
NT Y BUFF Q434
IC501 (2/3)
NT C BUFF Q437
COMB Y AMP Q413
COMB Y AMP Q414
COMB Y AMP Q415
COMB Y BUFF Q416
IC102 NTSC/PAL SW2
IC101 NTSC/PAL SW1
PROTECT Q427
+12V REG IC401
-12V REG IC402
NT C AMP Q435
TRA


BC
C AMP-2 Q505
C BUFF Q506
C AMP-1 Q500
PEAK HOLD-1 Q502
BGP SW-2 Q504
PEAK HOLD-2 Q503
BGP SW-1 Q501
IC500
TO BB BOARD
QA
+15V
+12V
+12V REG IC10
+28V
+12V REG IC9
+12V
+5V
+5V REG IC8
+9V
+9V REG IC7
IC5 MODE DISCRI
SYNC AMP Q13
SYNC OUT Q14
SYNC
TO D BOARD
VIDEO OUT
YC/V SW Q25
YC/VIDEO
MONITOR OUT
PJ SW
HATCH/BAR
VPH/VPR
LINE/RGB
VPR-VR
NOR/TEST
VR
TO D BOARD
+12V REG IC206
+9V REG IC205
-15V
-12V
-12V REG IC207
IC204 AUDIO AMP
TO QA BOARD
TO BB BOARD
SP901
QB
BA
VIDEO
VIDEO AMP Q407~409
C BUFF-1 Q431
C AMP Q432
C BUFF-2 Q433
IC501 (1/3)
SECAM C BUFF Q436
BELL
T201
LIMITER
SECAM SW
R-Y DEMO
B-Y DEMO
COLOR CONTROL
G-Y MATRIX
RGB MATRIX
IC201 SECAM DEMO
LIMITER
FF
ID DET
SYSTEM SW KILLER
BLANKING
RV111
SECAM SUB COL
INVERTER Q145
CUT OFF ADJ Q443
R BUFFER Q424
G BUFFER Q425
B BUFFER Q426
R OUT
G OUT
B OUT
TO BB BOARD
+12V
RV103
HUE
HUE 1
HUE 3
HUE 2
SECAM
COLOR
SHARP
TO D BOARD
BPT BUFF Q442
SECAM AMP Q136
INVERTER Q149
SECAM SW Q150
SECAM SW Q154
BLK SW Q417
SYNC
BLK
H.BLK
RV109
SUB COL
RV107
SUB PIC
AGC AMP
CHROMA AMP
COLOR CONTROL
CONTRAST CONTROL
CHROMA AMP
AGC DET
BURST AMP
HUE CONT Q124
ID KILLER
PAL SW
FF
APC DET
VCO
IC103 (1/2) NTSC/PAL DEMODULATOR
PAL AMP Q135
DELAY DL103
T104
DAT BUFFER Q129
DAT BUFFER Q130
B-Y DEMO
PEDESTAL CLAMP
VIDEO AMP
SYSTEM SW
R-Y SW Q132
B-Y SW Q131
COL SW Q138
SYSTEM SW2 Q139
IC103 (1/2) NTSC/PAL DEMO
X101
X102
OSC SW1 Q127
OSC SW2 Q128
APC
3.58
4.43
RV104
RV105
NTSC SW Q137
PHASE SW Q125
PHASE CONT Q126
SYSTEM SW1 Q144
W/B SW1,2 Q440,441
IC104 COL MODE SEL
V.BLK
TO BB BOARD
IC404 50/60 CTL
50/60 INV Q418
50/60 INV Q419
50/60
IC102 NTSC/PAL SW2
CHROMA SW Q120
ID SW2 Q123
RV106
KILLER
ID AMP Q121
ID SW1 Q122
CHROMA BUFF Q412
CHROMA SW Q423
NT Y BUFF Q434
IC501 (2/3)
NT C BUFF Q437
COMB BUFF Q410
COMB AMP Q411
DL402
COMB Y AMP Q413
COMB Y AMP Q414
COMB Y AMP Q415
COMB Y BUFF Q416
IC101 NTSC/PAL SW1
TRAP SW Q153
B/W SW Q422
PROTECT
PROTECT Q427
+15V
+12V REG IC401
+12V
-12V
-12V REG IC402
-15V
Y-AMP Q116
TRAP T103
TRAP SW Q117
NT C AMP Q435
PAL SW Q118
Y-BUFFER Q420
TRAP T102
TRAP SW Q152
IC501 (3/3)
Y BUFF 2,3 Q438,439
Y-BUFFER Q401
APT DRIVE Q421
APT DRIVE Q402
IC403 APT CTL
Y-AMP Q404~406
Y-AMP Q403

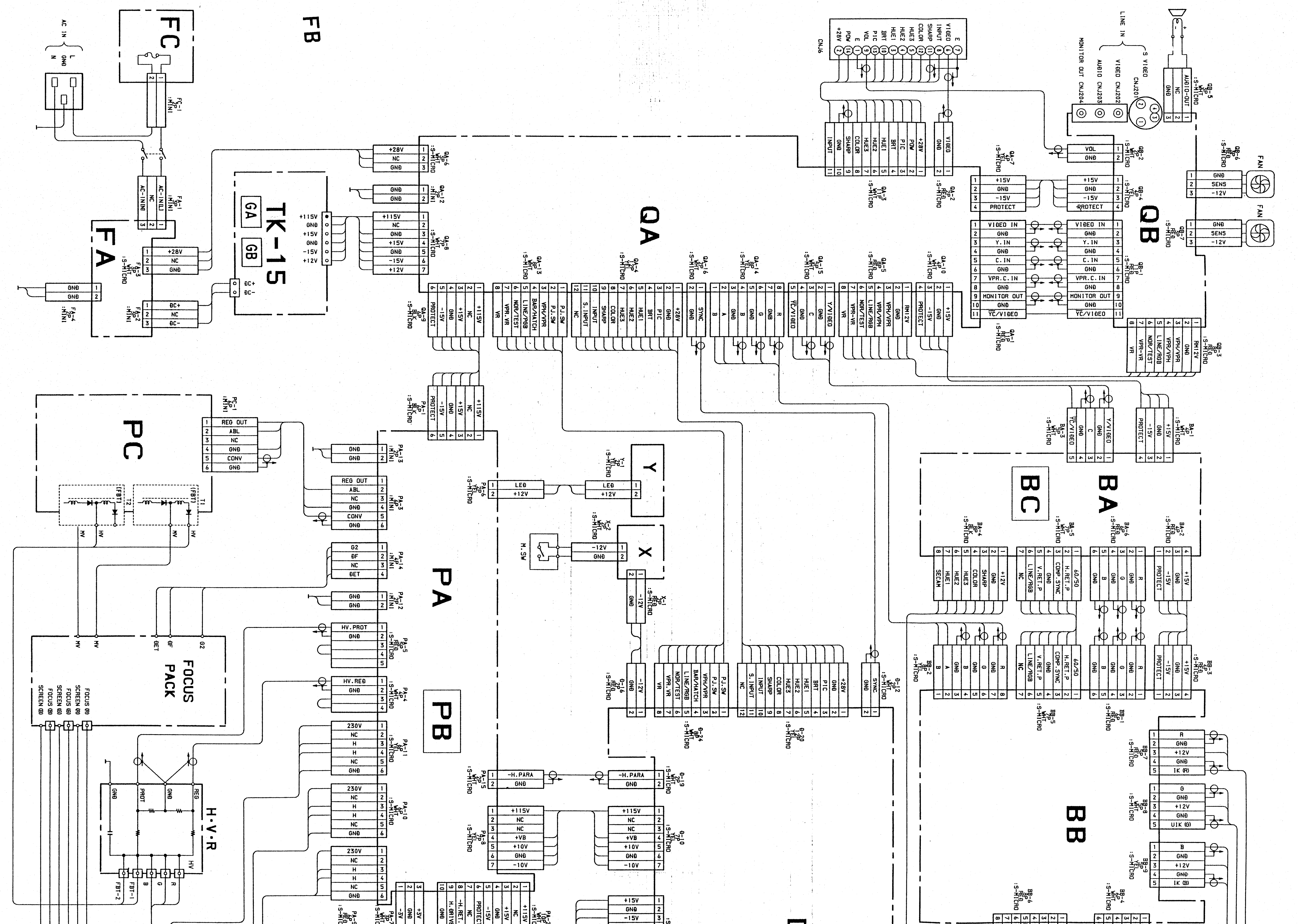

BB
IC3 REG SW (R,G)
IC4 REG SW (B)
IC5 PIC/BRT CONT
R BUFFER Q13
G BUFFER Q14
B BUFFER Q15
BLK BUFFER Q39
R BUFFER Q2
G BUFFER Q5
B BUFFER Q8
R DRIVE Q3
G DRIVE Q6
B DRIVE Q9
R RAS SW Q4
G RAS SW Q7
B RAS SW Q10
LIMITER Q40
BIAS Q11, 12
RV1 R.DRIVE
RV2 G.DRIVE
RV3 B.DRIVE
RED
R RAS ON/OFF
GREEN
G RAS ON/OFF
BLUE
B RAS ON/OFF
TO D BOARD
TO QA BOARD
TO BA BOARD
TO D BOARD
TO BA BOARD
TO BA BOARD
-HOT.P
H.RET.P
COMP SYNC
V.RET.P
LINE RGB
60/50
PROTE
SYNC BUFF Q35
H.P INVERT Q20
H.P INVERT Q16
H.P BUFFER Q17
SYNC BUFF Q36, 37
IC6(1/4)
IC6(2/4)
IC6(3/4)
IC11 H.PLL
VCO
IC15(1/4) GATE 1
IC15(2/4)
IC15(3/4)
IC15(4/4) GATE 1
IC17(2/2) H BLK
IC17(1/2) IV BLK
IC12 H COUNTER
IC16 (1/2) GATE 2
IC16 (2/2) GATE 2
IC7 (1/4)
IC7 (2/4)
IC7 (3/4)
IC7 (4/4)
BLK S1
IC13 V.PLL
IC14 V COUNTER
IC18 (2/2) HV BLK
IC18 (1/2) V BLK
+15V
+12V REG IC1
+12V
-15V
-12V REG IC2
-12V
-12V PROTE Q41
IC8 (1/2) LEVEL SHIFT
RV4 SUB BRT
BRT
DOT SW1 Q18
DOT SW2 Q19
DOT/HATCH
PIC
IC8 (2/2)
IC9 (1/2)
IC9 (2/2)
IK (R)
IK (G)
IK (B)
PIC ABL Q34
TOTAL ABL Q24
PEAK ABL Q25
S.T ABL Q26
IC10 (2/2)
IC10 (1/2)
IK (R) BUFF Q21
IK (G) BUFF Q22
IK (B) BUFF Q23
TO E BOARD
TO QA BOARD
TO D BOARD
H.DRIVE
PROTECT
-H.RET.P
ABL
-H. PARA
H DRIVE Q4
T3
SPEED UP D4
CONV Q6
T4
PROT SW Q8
CURRENT PROT Q5
+230V
+230V RECT D7
-3V RECT D9
+3V RECT D8
+10V RECT D10
-10V RECT D11
HEATER
HEATER
H DRIVE BUFF Q7
H DRIVE 1 Q3
T2
HV PROT SW1 Q9
HV PROT SW2 Q10
IC3 (2/2)
IC2 (2/2)
IC1 (2/2)
+115V
Σ IK PROT DET Q12
Σ IK PROT DET Q11
HV REG Q1
T1
HV REG DRIVE Q2
REG BUFFER Q14
IC1 HV.REG CONT
DRIVE
-H.P
OSC
PROTECT
IC3(2/2)
IC4
T5

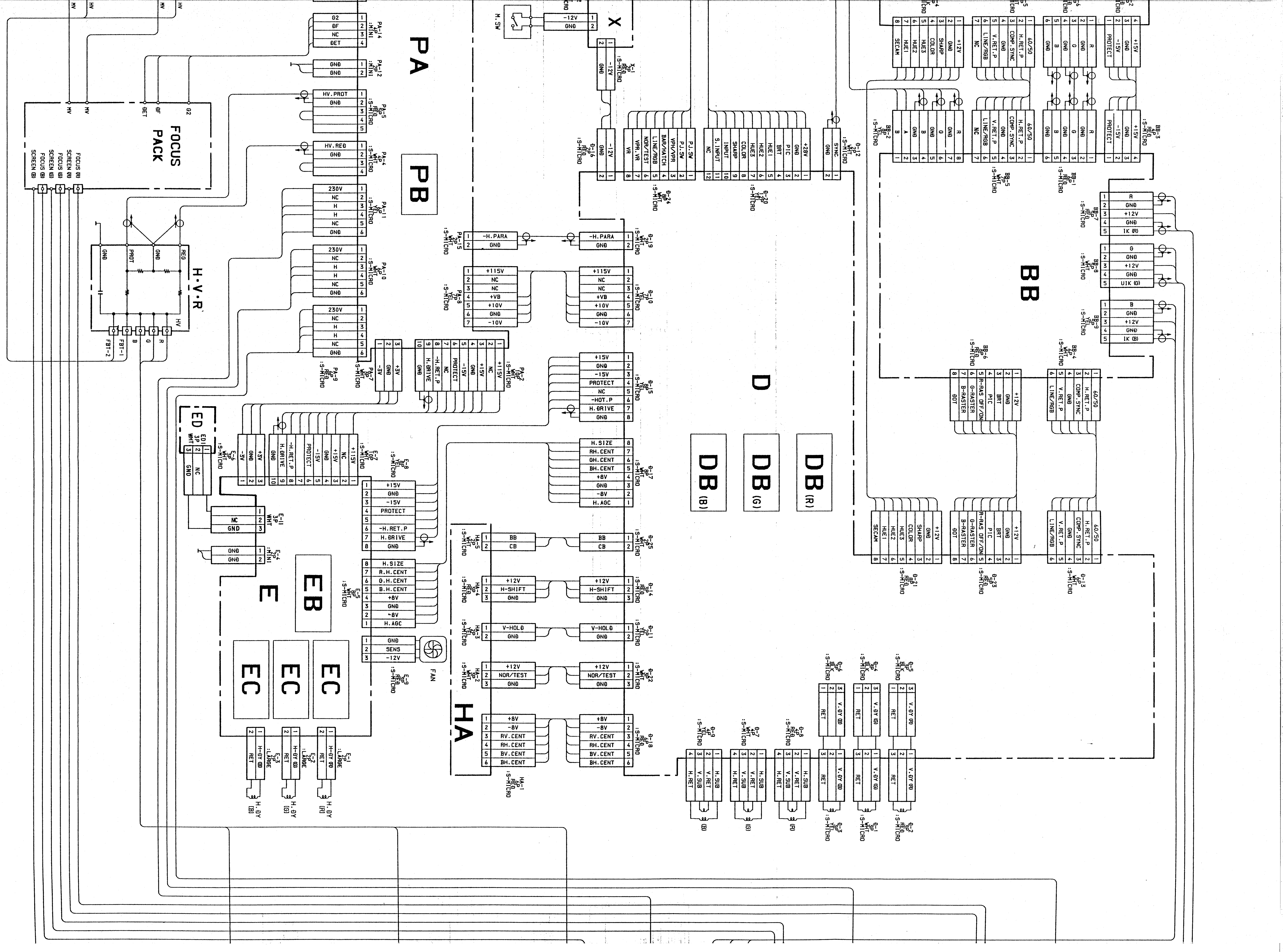

R VIDEO AMP Q701
R VIDEO OUT Q702
R IK DET 1 Q704
R IK DET 2 Q703
CR
R CRT
G VIDEO AMP Q721
G VIDEO OUT Q722
G IK DET 1 Q724
G IK DET 2 Q723
CG
G CRT
B VIDEO AMP Q741
B VIDEO OUT Q742
B IK DET 1 Q744
B IK DET 2 Q743
CB
B CRT
PC
T4
-3V RECT D9
-3V
+3V RECT D8
+3V
+10V RECT D10
+10V
-10V RECT D11
-10V
HEATER
HEATER
V STOPPER D12
V RECT D13
+VB
+115V
CONV
HV.CONV Q1
ABL
MV
MV
FOCUS PACK
FR
FG
FB
SR
SG
SB
G2 DET DF
IC1(2/2)
IC1(1/2)
HV REG
REG
HV BLOCK
R
G
B
IC2(1/2)
HV PROT
PROT
+12V
D1
Y
+5V
IC1 HV.REG CONT
NF
IN
DRIVE
-H.P
PROTECT
OSC
IC1
PB
G2 CONT Q13
G2
DET
DF
T5
PA
TO NECK ASSY
TO DEFLECTION YOKE
DY(R)
DY(G)
DY(B)

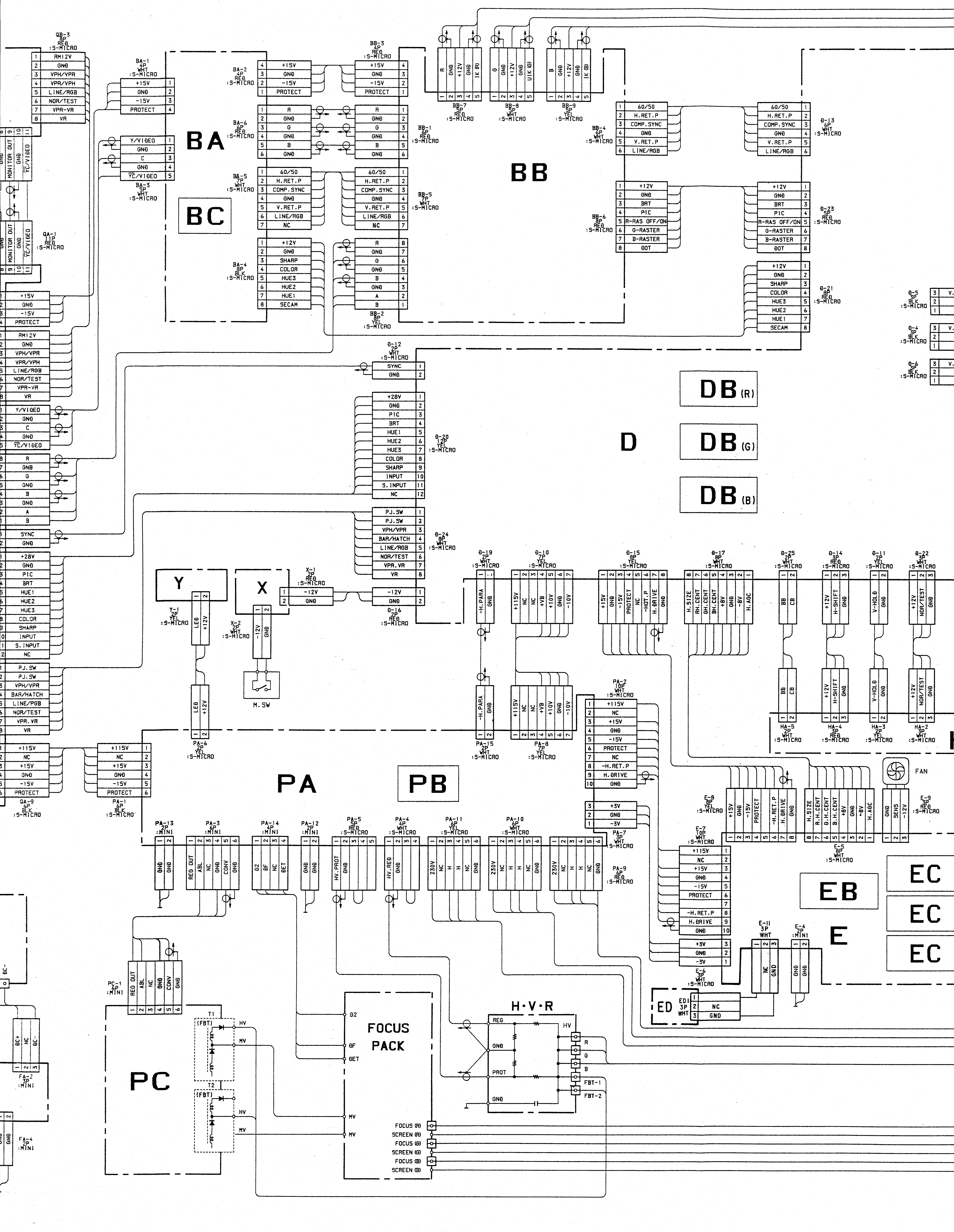

E
EB
EC (R)
EC (G)
EC (B)
ED
FC
FA
TK-15
GA
GB
HA
TO PA BOARD
TO FAM
TO BB BOARD
TO QA
TO QA BOARD
TO BA BOARD
H DRIVE
-H.RET.P
PROTECT
SENS
H SIZE
H AGC
RH CENT
GH CENT
BH CENT
PROTECT/SW1 Q6
H.PIN OLP Q5
PROTECT/SW2 Q7
+12V REG IC1
-12V REG IC3
H.OUT DRIVE Q4
H.OUT Q1
T1
T2
T3
H.PIN AMP
IC2
IC1 H.PIN CONT
COMP
OSC
DRIVE
H.PIN. BUFF Q9
H.PIN. DRIVE Q3
H.PIN.OUT Q2
H.CENT OUT Q1, Q2
IC1 H.CENT. DRIVE
L6
L7
L8
R-H-DY
G-H-DY
B-H-DY
AC IN
F1
POWER SW
RM RECT D2
28V
VOLTAGE SELECTOR SW-1
MAIN RECT D1
±DC
±DC IN
L601
SWITCHING Q601
T601
T602
T603
+15V RECT D653
-15V RECT D654
115V RECT D651
+15V
-15V
+115V
OVER VOLTAGE DETECT Q673, 674
OVER VOLTAGE DETECT Q675~Q677
KICK Q671, 672
REG (PWM) IC671
KICK RECT D671, 672
V HOLD
RV455
B
V CENT
R
RV454
BV CENT
RV453
RV CENT
RV452
BH CENT
H CENT
RV451
RH CENT
PROTECT
-12V PROT Q18
+12V
-12V
H. SHIFT
-HOT. P
H. PULSE AMP Q2
H PULSE BUFF Q3
IC3 MODE SW
H-HOLD RGB
H-HOLD LINE
RV1
RV2
LINE/RGB
NOR/TEST
H. DRIVE
50/60
PAL H. CENT Q16
SYNC
SYNC BUFF Q1
H.SYNC
AFC
H.OSC
PROTECT
PRE. DRIVE
C.SYNC
IC1 H.V. OSC
V. SYNC
V.OSC
V. BLK
V. DRIVE
V.SYNC SEP Q17
V. SAW-1 Q4
V.SAW-2 Q5
V. HOLD
V. SIZE 50/60 Q6
+V.RET.P
H. PARA
H. AGC
H. SAW BUFF
H. PARA GEN
H. SAW GEN
IC2 SIG GEN
V. PARA GEN
V. SAW
PIC
BRT
R·RAS
G·RAS
B·RAS
DOT/HATCH
BAR/HATCH
VPH/VPR
PJ·SW
PJ·SW
VOL
VPR VOL
HUE 2
HUE 1
HUE 3
COLOR
SHARP
VPR·PIC
VPR·BRT
VPR·HUE 1
VPR·HUE 2
VPR·HUE 3
VPR·COLOR
VPR·SHARP
VPR·INPUT
INPUT
AUTO/SECAM
CB
IC403 REMOTE SW
IC402 REMOTE SW
IC401 REMOTE SW
SHAPNESS RV404
COLOR RV405
HUE RV406
BRIGHT RV403
PICTURE RV402
VOLUME RV401
PROJECTOR S401
BAR S8
DOT S9
AUTO
SECAM
COLOR SYSTEM S403
M SW

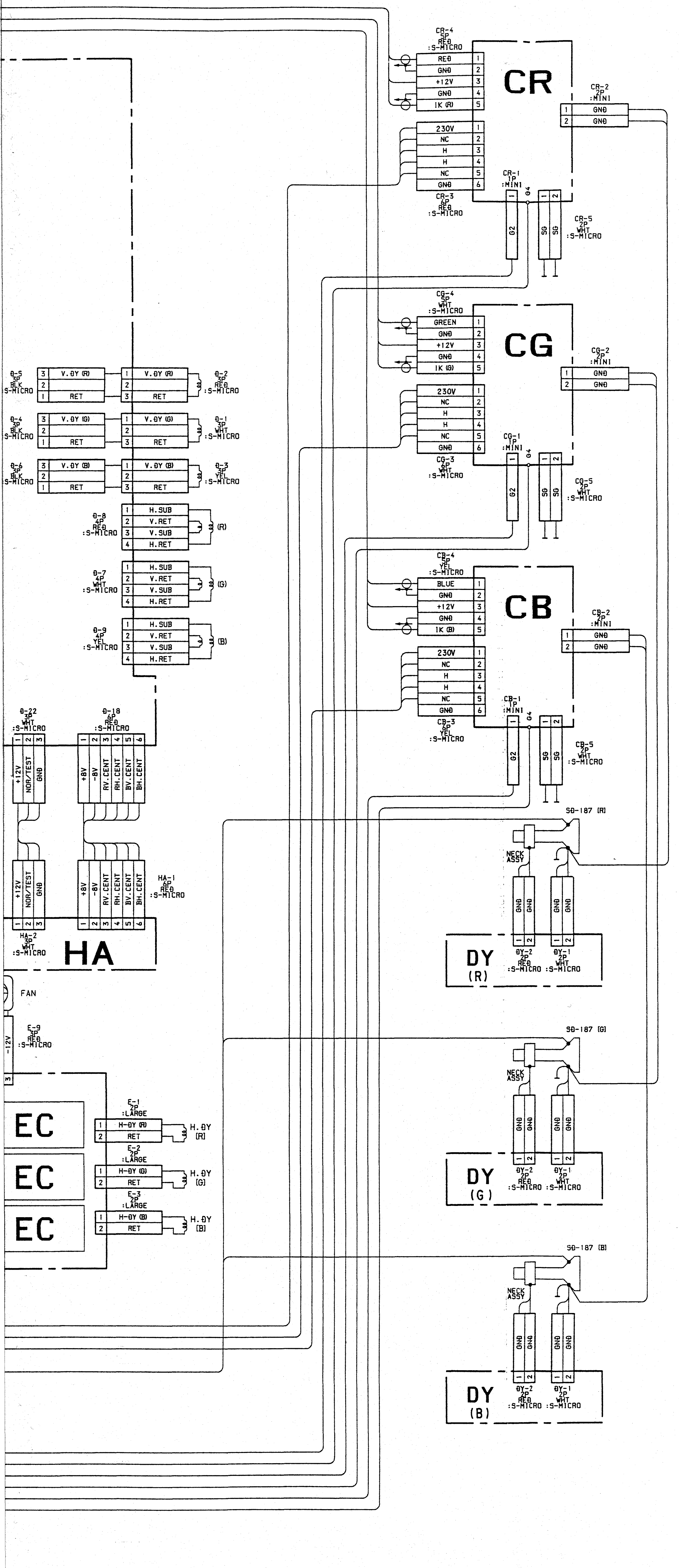

TO PA BOARD
-H. PARA
H. AGC
GH CENT
H SIZE
RV CENT
RH CENT
GV CENT
BV CENT
BH CENT
H. SAW BUFF
H. PARA GEN
H. SAW GEN
H. PARA BUFF
IC2 SIG GEN
V. PARA GEN
V. SAW
V. PARA
PAL H. CENT Q16
DRIVE
V. SAW-1 Q4
V.SAW-2 Q5
V. SIZE 50/60 Q6
+12V
+8V REG IC16
+8V
-12V
-8V REG IC17
-8V
+15V
+12V REG IC6(H)
+12V
-15V
-12V REG IC5
-12V
+12V REG IC7(V)
+15V
+12V REG IC4
S2 H1
S5 V2
S4 V1
VARIABLE RESISTOR CONTROL BLOCK
GV
GH
RV
RH
BV
BH
RV9
RV8
RV7
RV6
RV5
RV15
RV14
RV13
RV12
RV11
RV10
RV24
RV23
RV22
RV21
RV20
RV19
RV18
RV17
RV16
RV33
RV32
RV31
RV30
RV29
RV28
RV27
RV26
RV25
RV42
RV41
RV40
RV39
RV38
RV37
RV36
RV35
RV34
RV51
RV50
RV49
RV48
RV47
RV46
RV45
RV44
RV43
TILT-4
TILT-3
TILT-2
TILT-1
BOW
SKEW
L IN
SIZE
CENT
IC9 TILT BUFF
IC10 TILT SW
IC8 HALF H.V
IC13 V. PIN AMP
KEYS GEN IC15
V. PIN GEN IC14
S6 MODEL SELECT
S7 SIZE SELECT
IC11 H.LIN BUFF
IC12 V.KEYS BUFF
S3 V DC
S1 H DC
+8V
-8V
IC401 REMOTE SW
PROJECTOR S401
BAR S8
DOT S9
B-RAS S10
G-RAS S11
R-RAS S12
CTURE V402
VOLUME RV401
PL1
M SW
X
V.OUT/PROT2 Q20
V.OUT/PROT1 Q19
IC19(2/2)
V.DRIVE-R Q10
V.OUT-R Q11,12
V.DY(R)
IC18(2/2)
V.DRIVE-G Q7
V.OUT-G Q8,9
V.DY(G)
IC19(1/2)
V.DRIVE-B Q13
V.OUT-B Q14,15
V.DY(B)
IC18(1/2)
IC1 SUB OUT DRIVE
V.RET
V IN
H IN
V SUB OUT Q1,2
V.OUT
H SUB OUT Q3,4
H.OUT
H RET
DB(R)
V
SUB DY(R)
H
DB(G)
SUB DY(G)
DB(B)
SUB DY(B)
D

7-4. FRAME SCHEMATIC DIAGRAM


FC
FB
FA
TK-15
GA
GB
QA
QB
PC
PA
PB
Y
X
BA
BC
BB
FOCUS PACK
H·V·R
AC IN
LINE IN
S VIDEO
VIDEO2 CNJ202
AUDIO CNJ203
MONITOR OUT CNJ204
CNJ6
FAN
FAN
M.SW
FBT-1
FBT-2
(FBT) T1
(FBT) T2


PA
PB
X
D
DB (R)
DB (G)
DB (B)
BB
HA
E
EB
EC
EC
EC
ED
FOCUS PACK
H·V·R
FAN
M.SW
H.DY (R)
H.DY (G)
H.DY (B)
PA-14
PA-12
PA-5
PA-4
PA-11
PA-10
PA-9
PA-7
PA-2
PA-15
PA-8
X-1
D-16
D-24
D-20
D-12
D-19
D-10
D-15
D-17
D-25
D-14
D-11
D-22
D-18
D-21
D-23
D-13
D-9
D-7
D-8
D-6
D-4
D-5
D-3
D-1
D-2
BB-1
BB-2
BB-3
BB-4
BB-5
BB-6
BB-7
BB-8
BB-9
HA-1
HA-2
HA-3
HA-4
HA-5
E-1
E-2
E-3
E-4
E-5
E-6
E-7
E-8
E-9
E-11
ED1
FBT-1
FBT-2
HV
G2
ΘF
ΘET
FOCUS (R)
FOCUS (G)
FOCUS (B)
SCREEN (R)
SCREEN (G)
SCREEN (B)
S-MICRO
MINI
LARGE


BA
BB
BC
D
DB (R)
DB (G)
DB (B)
PA
PB
PC
Y
X
M.SW
E
EB
EC
EC
EC
ED
FOCUS PACK
H·V·R
FAN
QB-3 8P RED :S-MICRO
QA-1 11P RED :S-MICRO
QA-9 6P BLK :S-MICRO
BA-1 4P WHT :S-MICRO
BA-2 4P RED :S-MICRO
BA-3 5P WHT :S-MICRO
BA-4 8P BLK :S-MICRO
BA-5 7P WHT :S-MICRO
BA-6 6P RED :S-MICRO
BB-1 6P RED :S-MICRO
BB-2 8P YEL :S-MICRO
BB-3 4P RED :S-MICRO
BB-4 6P WHT :S-MICRO
BB-5 7P WHT :S-MICRO
BB-6 8P RED :S-MICRO
BB-7 5P RED :S-MICRO
BB-8 5P WHT :S-MICRO
BB-9 5P YEL :S-MICRO
D-5 3P BLK :S-MICRO
D-4 3P BLK :S-MICRO
D-6 3P BLK :S-MICRO
D-10 7P YEL :S-MICRO
D-11 2P YEL :S-MICRO
D-12 2P WHT :S-MICRO
D-13 6P WHT :S-MICRO
D-14 3P RED :S-MICRO
D-15 8P YEL :S-MICRO
D-16 2P RED :S-MICRO
D-17 8P WHT :S-MICRO
D-19 2P WHT :S-MICRO
D-20 12P YEL :S-MICRO
D-21 8P RED :S-MICRO
D-22 3P WHT :S-MICRO
D-23 8P RED :S-MICRO
D-24 8P WHT :S-MICRO
D-25 2P WHT :S-MICRO
X-1 2P RED :S-MICRO
X-2 2P WHT :S-MICRO
Y-1 2P YEL :S-MICRO
PA-1 6P BLK :S-MICRO
PA-2 10P WHT :S-MICRO
PA-3 6P :MINI
PA-4 4P WHT :S-MICRO
PA-5 5P RED :S-MICRO
PA-6 2P YEL :S-MICRO
PA-7 3P WHT :S-MICRO
PA-8 7P YEL :S-MICRO
PA-9 6P RED :S-MICRO
PA-10 6P WHT :S-MICRO
PA-11 6P YEL :S-MICRO
PA-12 2P :MINI
PA-13 2P :MINI
PA-14 4P :MINI
PA-15 2P WHT :S-MICRO
PC-1 6P :MINI
HA-2 3P WHT :S-MICRO
HA-3 2P YEL :S-MICRO
HA-4 3P RED :S-MICRO
HA-5 2P WHT :S-MICRO
E-4 2P :MINI
E-5 8P WHT :S-MICRO
E-6 3P WHT :S-MICRO
E-7 10P WHT :S-MICRO
E-8 8P YEL :S-MICRO
E-9 3P RED :S-MICRO
E-11 3P WHT
ED1 3P WHT
FA-2 3P :MINI
FA-4 2P :MINI
+15V
GND
-15V
PROTECT
RM12V
VPH/VPR
LINE/RGB
NOR/TEST
VPR-VR
VR
Y/VIDEO
C
YC/VIDEO
MONITOR OUT
R
G
B
A
SYNC
+28V
PIC
BRT
HUE1
HUE2
HUE3
COLOR
SHARP
INPUT
S.INPUT
NC
PJ.SW
BAR/HATCH
VPR.VR
+115V
+12V
60/50
H.RET.P
COMP.SYNC
V.RET.P
SECAM
IK (R)
UIK (G)
IK (B)
R-RAS OFF/ON
G-RASTER
B-RASTER
DOT
LED
-12V
-H.PARA
+VB
+10V
-10V
-HOT.P
H.DRIVE
H.SIZE
RH.CENT
GH.CENT
BH.CENT
+8V
-8V
H.AGC
BB
CB
H-SHIFT
V-HOLD
REG OUT
ABL
CONV
G2
DF
DET
HV.PROT
HV.REG
230V
H
-H.RET.P
+3V
-3V
R.H.CENT
G.H.CENT
B.H.CENT
SENS
T1
T2
(FBT)
HV
MV
FOCUS (R)
SCREEN (R)
FOCUS (G)
SCREEN (G)
FOCUS (B)
SCREEN (B)
REG
PROT
FBT-1
FBT-2
DC+
DC-


CR
CG
CB
HA
EC
EC
EC
DY (R)
DY (G)
DY (B)
CR-4 5P RED :S-MICRO
RED
GND
+12V
GND
IK (R)
230V
NC
H
H
NC
GND
CR-3 6P RED :S-MICRO
CR-1 1P :MINI
CR-2 2P :MINI
CR-5 2P WHT :S-MICRO
G2
G4
SG
CG-4 5P WHT :S-MICRO
GREEN
IK (G)
CG-3 6P WHT :S-MICRO
CG-1 1P :MINI
CG-2 2P :MINI
CG-5 2P WHT :S-MICRO
CB-4 5P YEL :S-MICRO
BLUE
IK (B)
CB-3 6P YEL :S-MICRO
CB-1 1P :MINI
CB-2 2P :MINI
CB-5 2P WHT :S-MICRO
V.DY (R)
V.DY (G)
V.DY (B)
RET
H.SUB
V.RET
V.SUB
H.RET
θ-5 3P BLK :S-MICRO
θ-2 3P RED :S-MICRO
θ-4 3P BLK :S-MICRO
θ-1 3P WHT :S-MICRO
θ-6 3P BLK :S-MICRO
θ-3 3P YEL :S-MICRO
θ-8 4P RED :S-MICRO
θ-7 4P WHT :S-MICRO
θ-9 4P YEL :S-MICRO
θ-22 3P WHT :S-MICRO
θ-18 6P RED :S-MICRO
+12V
NOR/TEST
+8V
-8V
RV.CENT
RH.CENT
BV.CENT
BH.CENT
HA-1 6P RED :S-MICRO
HA-2 3P WHT :S-MICRO
FAN
-12V
E-9 3P RED :S-MICRO
E-1 2P :LARGE
E-2 2P :LARGE
E-3 2P :LARGE
H-DY (R)
H-DY (G)
H-DY (B)
H.DY [R]
H.DY [G]
H.DY [B]
SD-187 (R)
SD-187 (G)
SD-187 (B)
NECK ASSY
DY-2 2P RED :S-MICRO
DY-1 2P WHT :S-MICRO

7-5. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

- All capacitors are in uF unless otherwise noted. pF: uuF .50 WV or less are not indicated except for electrolytics and tantalums.
- Unless otherwise noted is 1/4W resistor and 1/10W chip resistor.
  kΩ :1000 Ω, MΩ 1000k Ω.
- All resistors are in ohms.
- : fusible resistor
- : nonflammable resistor.
- △ : internal component.
- ☐ : panel designation and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

※ Adjustment resistor measurement impossibility.
(GA BOARD R684)

- The components identified by ☒ in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regarding X-ray radiation.
  Should replacement be required, replace only with the value originally used.
  When replacing components identified by ◪, make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ☒ and repeat the adjustment until the specified value is achieved.

(Refer to R38, 39, 48, 49, 23, 88, 89 adjustment on page 39, 40)

Part replaced (◪)	Adjustment(☒)
C30, D16, D22, IC2, Q10, R15, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44 ......PA BOARD	HV HOLD-DOWN (R38, R39)
C3, C39, C56, D17, IC1, L2, Q14, R31, R32, R33, R34, R46, R47, R48, R49, R82, R83, R84......PA BOARD IC1, R3, R4, R7, R14 ...PB BOARD	HV REGULATION (R48, R49)
D15, D20, IC3, Q9, Q11, Q12, R16, R18, R19, R20, R21, R22, R23, R50, R51, R52, R53, R54, R69......PA BOARD	BEAM CURRENT PROTECTOR (R23)
D18, IC1, R18, R85, R86, R87, R88, R89......PA BOARD	OVER VOLTAGE PROTECTOR (R88, R89)

- ☐ : adjustment for repair.
- Circled numbers refer to waveforms.
- Voltage are dc with respect to ground unless otherwise noted.
- All voltages are in V.
- Voltage variations may be noted due to normal production tolerance.
- Readings are taken with a 10M Ω digital multimeter.
- ✳ Can not be measured.
- no mark: PAL mode
- ( ) : SECAM mode
- 〈 〉 : NTSC 3.58 mode
- 《 》 : NTSC 4.43 mode
- : B + line
- : B – line
- Circled numbers refer to waveforms.

Reference information

- RESISTOR

: RN	METAL FILM
: RC	SOLID
: FPRD	NONFLAMMABLE CARBON
: FUSE	NONFLAMMABLE FUSIBLE
: RW	NONFLAMMABLE WIREWOUND
: RS	NONFLAMMABLE METAL OXIDE
: RB	NONFLAMMABLE CEMENT
※	AJUSTMENT RESISTOR

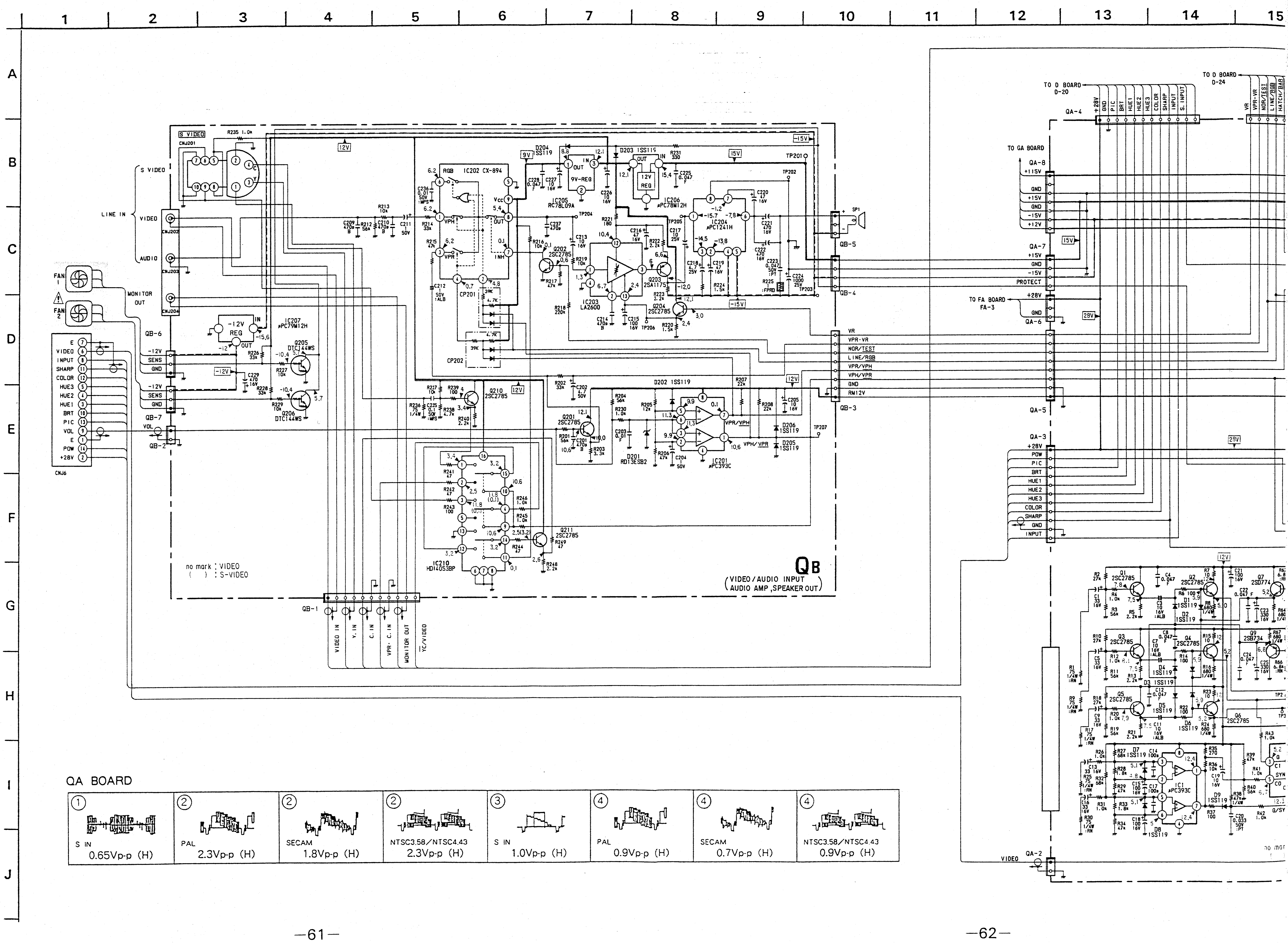
- COIL

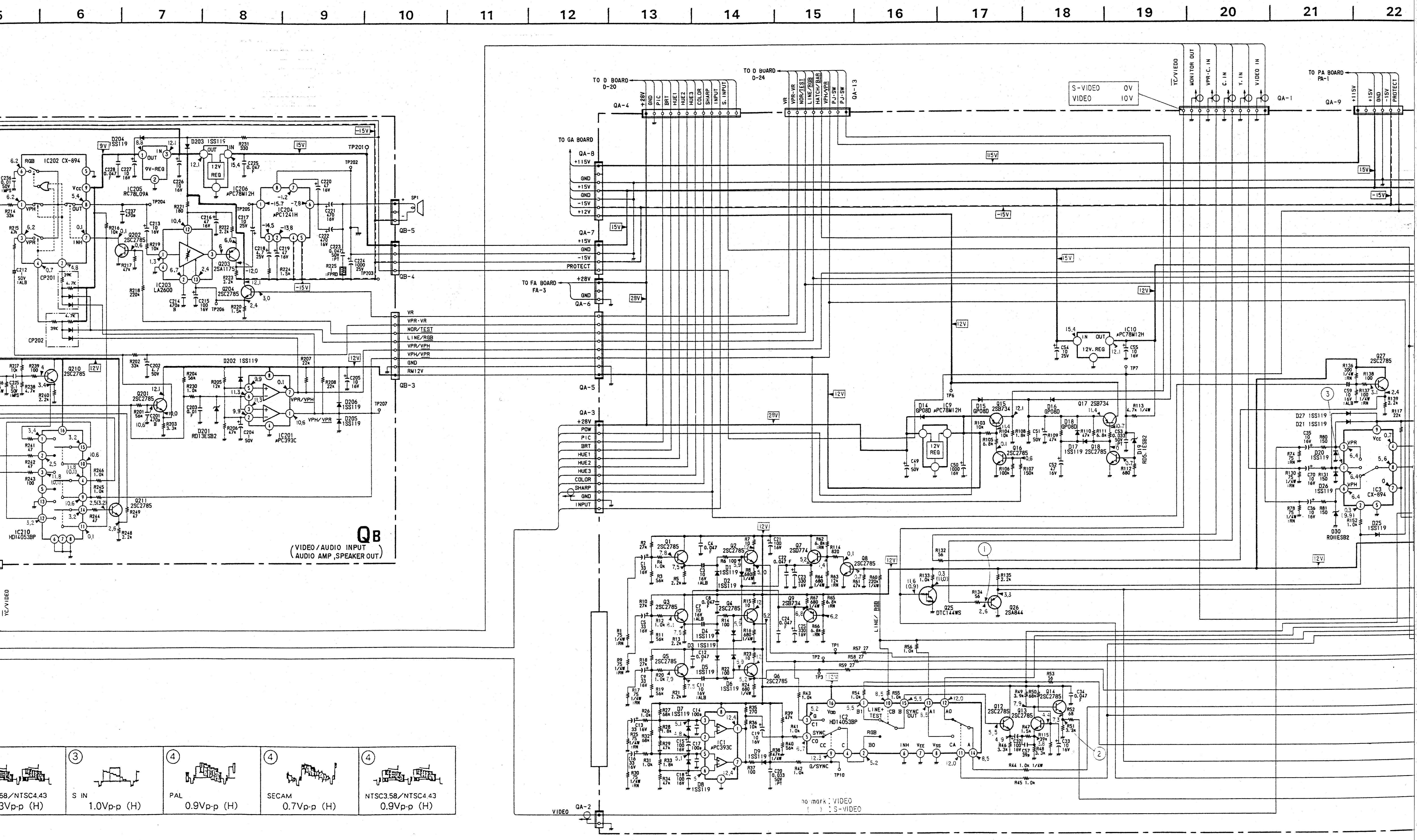
: LF-8L	MICRO INDUCTOR

- CAPACITOR

: TA	TANTALUM
: PS	STYROL
: PP	POLYPROPYLENE
: PT	MYLAR
: MPS	METALIZED POLYESTER
: MPP	METALIZED POLYPROPYLENE
: ALB	BIPOLAR
: ALT	HIGH TEMPERATURE
: ALR	HIGHRIPPLE

Note : The Coimponents identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.


QB
(VIDEO/AUDIO INPUT
AUDIO AMP, SPEAKER OUT)
S VIDEO
CNJ201
LINE IN
VIDEO
AUDIO
CNJ202
CNJ203
CNJ204
MONITOR OUT
FAN 1
FAN 2
CNJ6
QB-1
QB-2
QB-3
QB-4
QB-5
QB-6
QB-7
IC202 CX-894
IC205 RC78L09A
IC206 μPC78M12H
IC204 μPC1241H
IC203 LA2600
IC201 μPC393C
IC207 μPC79M12H
IC210 HD14053BP
Q201 2SC2785
Q202 2SC2785
Q203 2SA1175
Q204 2SC2785
Q205 DTC144WS
Q206 DTC144WS
Q210 2SC2785
Q211 2SC2785
D201 RD13ESB2
D202 1SS119
D203 1SS119
D204 1SS119
D205 1SS119
D206 1SS119
CP201
CP202
SP1
9V-REG
12V REG
-12V REG
VIDEO IN
Y. IN
C. IN
VPR·C. IN
MONITOR OUT
YC/VIDEO
no mark : VIDEO
( ) : S-VIDEO
TO D BOARD D-20
TO D BOARD D-24
TO GA BOARD
TO FA BOARD FA-3
QA-2
QA-3
QA-4
QA-5
QA-6
QA-7
QA-8
VR
VPR·VR
NOR/TEST
LINE/RGB
VPR/VPH
VPH/VPR
GND
RM12V
+28V
POW
PIC
BRT
HUE1
HUE2
HUE3
COLOR
SHARP
INPUT
S. INPUT
PROTECT
IC1 μPC393C
QA BOARD
① S IN 0.65Vp-p (H)
② PAL 2.3Vp-p (H)
② SECAM 1.8Vp-p (H)
② NTSC3.58/NTSC4.43 2.3Vp-p (H)
③ S IN 1.0Vp-p (H)
④ PAL 0.9Vp-p (H)
④ SECAM 0.7Vp-p (H)
④ NTSC3.58/NTSC4.43 0.9Vp-p (H)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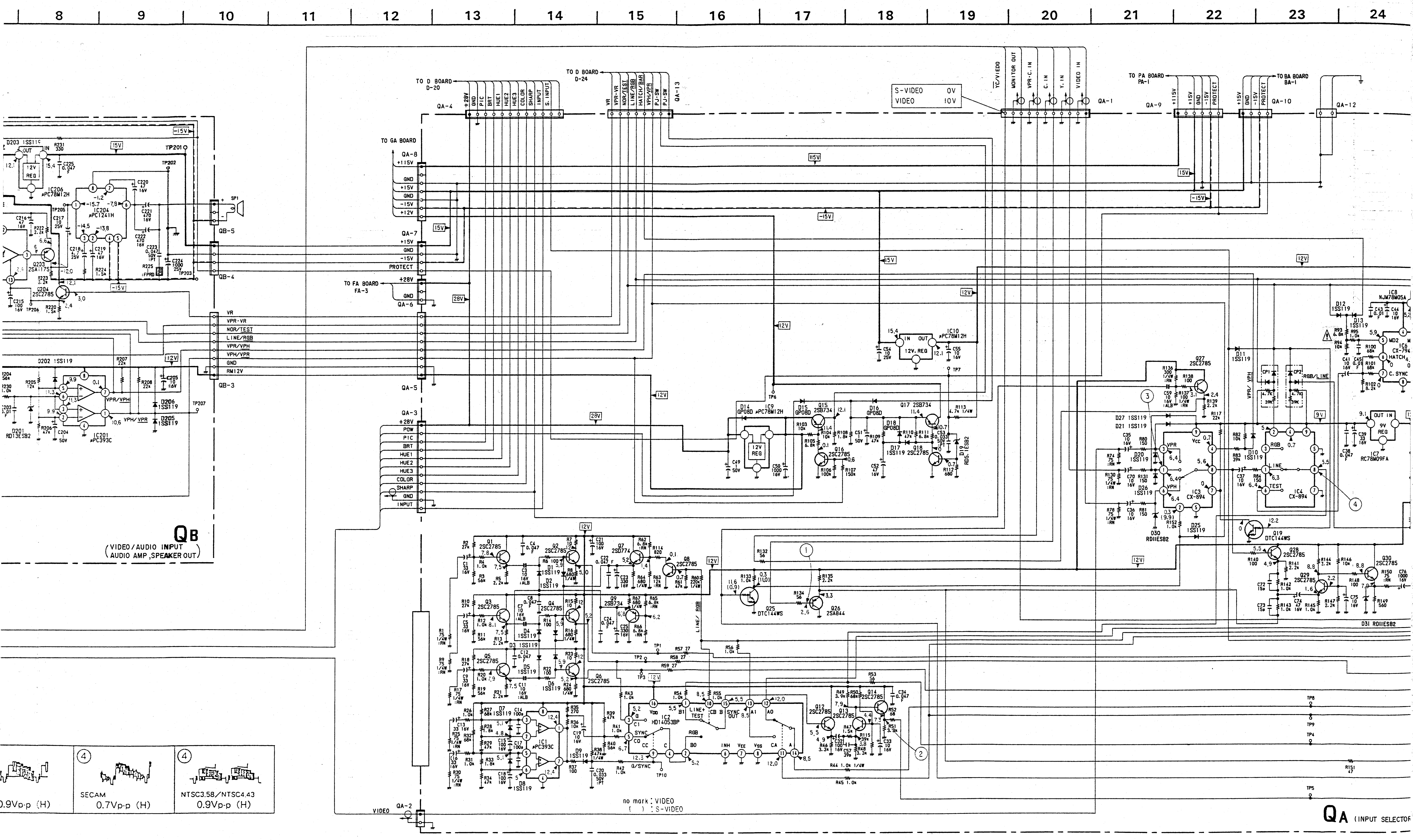
15
16
17
18
19
20
21
22
QB
(VIDEO/AUDIO INPUT
AUDIO AMP, SPEAKER OUT)
IC202 CX-894
IC205 RC78L09A
9V-REG
IC206 μPC78M12H
12V REG
IC204 μPC1241H
IC203 LA2600
IC201 μPC393C
IC210 HD14053BP
D202 1SS119
D203 1SS119
D204 1SS119
D205 1SS119
D206 1SS119
D201 RD13ESB2
Q201 2SC2785
Q202 2SC2785
Q203 2SA1175
Q204 2SC2785
Q210 2SC2785
Q211 2SC2785
CP201
CP202
SP1
QB-5
QB-4
QB-3
TP201
TP202
TP203
TP204
TP205
TP206
TP207
VR
VPR-VR
NOR/TEST
LINE/RGB
VPR/VPH
VPH/VPR
GND
RM12V
TO D BOARD D-20
TO D BOARD D-24
TO GA BOARD
TO FA BOARD FA-3
TO PA BOARD PA-1
QA-1
QA-2
QA-3
QA-4
QA-5
QA-6
QA-7
QA-8
QA-9
QA-13
+28V
GND
PIC
BRT
HUE1
HUE2
HUE3
COLOR
SHARP
INPUT
S.INPUT
POW
PROTECT
+115V
+15V
-15V
+12V
HATCH/BAR
PJ-SW
YC/VIDEO
MONITOR OUT
VPR-C.IN
C.IN
Y.IN
VIDEO IN
VIDEO
S-VIDEO 0V
VIDEO 10V
IC1 μPC393C
IC2 HD14053BP
IC3 CX-894
IC9 μPC78M12H
IC10 μPC78M12H
12V.REG
Q1 2SC2785
Q2 2SC2785
Q3 2SC2785
Q4 2SC2785
Q5 2SC2785
Q6 2SC2785
Q7 2SD774
Q8 2SC2785
Q9 2SB734
Q12 2SC2785
Q13 2SC2785
Q14 2SC2785
Q15 2SB734
Q16 2SC2785
Q17 2SB734
Q18 2SC2785
Q25 DTC144WS
Q26 2SA844
Q27 2SC2785
D14 GP08D
D15 GP08D
D16 GP08D
D18 GP08D
D17 1SS119
D19 RD5.1ESB2
D20 1SS119
D21 1SS119
D25 1SS119
D26 1SS119
D27 1SS119
D30 RD11ESB2
LINE/RGB
LINE TEST
SYNC OUT
G/SYNC
TP1
TP2
TP3
TP6
TP7
TP10
no mark : VIDEO
( ) : S-VIDEO
①
②
③
④
NTSC3.58/NTSC4.43
S IN 1.0Vp-p (H)
PAL 0.9Vp-p (H)
SECAM 0.7Vp-p (H)
NTSC3.58/NTSC4.43 0.9Vp-p (H)


8
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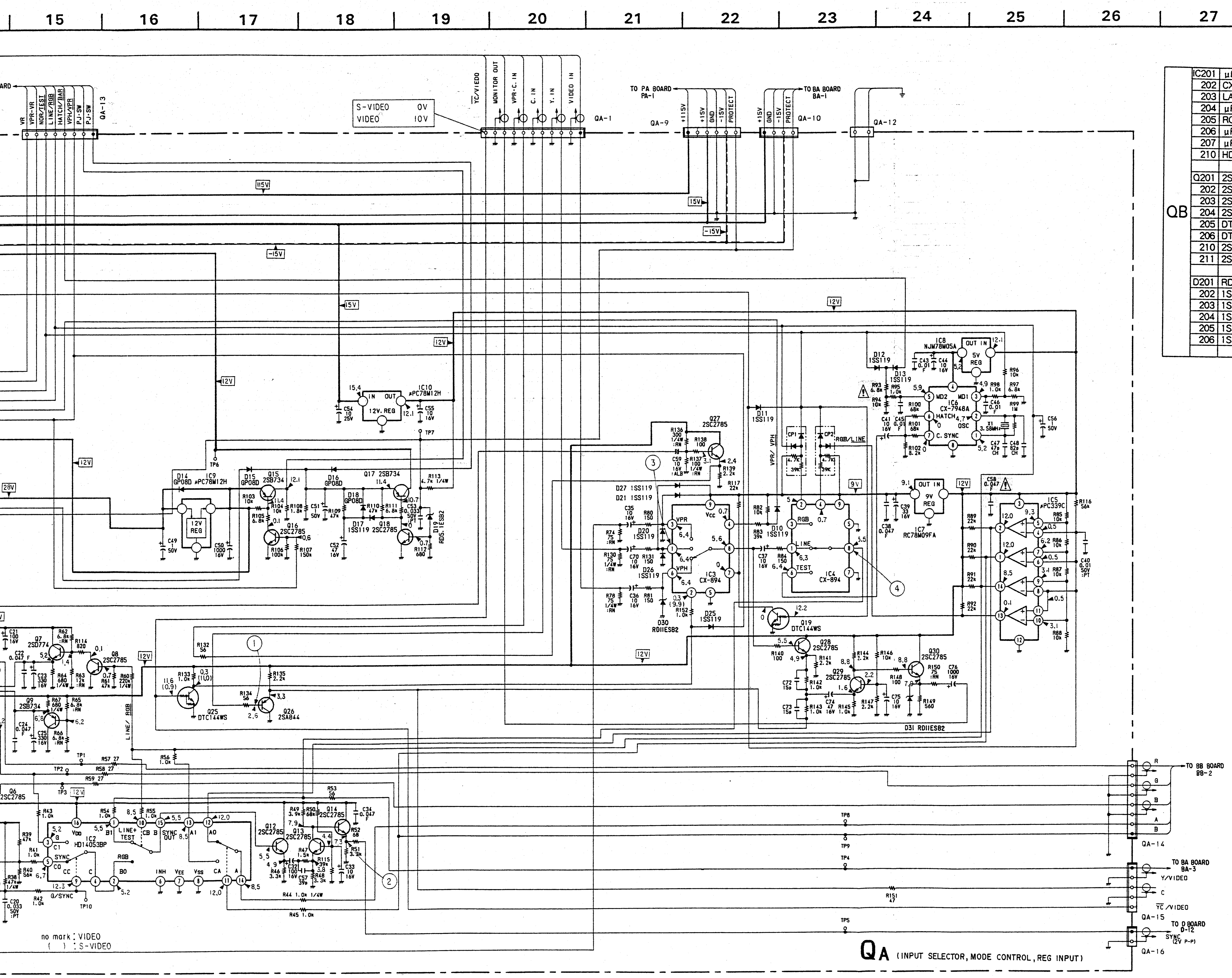
16
17
18
19
20
21
22
23
24
TO D BOARD D-20
TO D BOARD D-24
QA-4
QA-13
+28V
GND
PIC
BRT
HUE1
HUE2
HUE3
COLOR
SHARP
INPUT
S. INPUT
VR
VPR-VR
NOR/TEST
LINE/RGB
HATCH/BAR
VPH/VPR
PJ-SW
S-VIDEO 0V
VIDEO 10V
YC/VIDEO
MONITOR OUT
VPR-C. IN
C. IN
Y. IN
VIDEO IN
QA-1
TO PA BOARD PA-1
QA-9
+115V
+15V
-15V
PROTECT
TO BA BOARD BA-1
QA-10
QA-12
TO GA BOARD
QA-8
+115V
GND
+15V
-15V
+12V
QA-7
QA-6
TO FA BOARD FA-3
QA-5
QA-3
POW
QA-2
VIDEO
115V
15V
-15V
12V
28V
9V
IC206 μPC78M12H
IC204 μPC1241H
IC201 μPC393C
IC10 μPC78M12H
IC9 μPC78M12H
12V. REG
IC8 NJM78M05A
IC6 CX-794
IC7 RC78M09FA
IC3 CX-894
IC4 CX-894
IC1 μPC393C
IC2 HD14053BP
Q203 2SA1175
Q204 2SC2785
Q1 2SC2785
Q2 2SC2785
Q3 2SC2785
Q4 2SC2785
Q5 2SC2785
Q6 2SC2785
Q7 2SD774
Q8 2SC2785
Q9 2SB734
Q12 2SC2785
Q13 2SC2785
Q14 2SC2785
Q15 2SB734
Q16 2SC2785
Q17 2SB734
Q18 2SC2785
Q19 DTC144WS
Q25 DTC144WS
Q26 2SA844
Q27 2SC2785
Q28 2SC2785
Q29 2SC2785
Q30 2SC2785
SP1
QB-5
QB-4
QB-3
TP201
TP202
TP207
RM12V
VPR/VPH
VPH/VPR
LINE/RGB
LINE+TEST
SYNC OUT
G/SYNC
RGB
VPR
VPH
LINE
TEST
HATCH
C. SYNC
MD2
OUT IN
9V REG
D31 RD11ESB2
D30 RD11ESB2
D201 RD13ESB2
D19 RD5.1ESB2
QB
(VIDEO/AUDIO INPUT AUDIO AMP, SPEAKER OUT)
QA (INPUT SELECTOR
no mark : VIDEO
( ) : S-VIDEO
①
②
③
④
SECAM
0.7Vp-p (H)
NTSC3.58/NTSC4.43
0.9Vp-p (H)
.9Vp-p (H)


15
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17
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22
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24
25
26
27
28
29
30
VR
VPR-VR
NOR/TEST
LINE/RGB
HATCH/BAR
VPH/VPR
PJ-SW
PJ-SW
QA-13
S-VIDEO 0V
VIDEO 10V
YC/VIDEO
MONITOR OUT
VPR-C.IN
C.IN
Y.IN
VIDEO IN
QA-1
TO PA BOARD PA-1
QA-9
+115V
+15V
GND
-15V
PROTECT
TO BA BOARD BA-1
QA-10
QA-12
115V
15V
-15V
12V
28V
9V
IC10 μPC78M12H
12V. REG
IC9 μPC78M12H
12V REG
IC8 NJM78M05A
5V REG
IC6 CX-7948A
HATCH
OSC
C.SYNC
IC7 RC78M09FA
9V REG
IC5 μPC339C
IC3 CX-894
VPR
VPH
IC4 CX-894
RGB
LINE
TEST
RGB/LINE
VPR/VPH
IC2 HD14053BP
LINE+TEST
CB B
SYNC OUT
RGB
INH
VEE
VSS
G/SYNC
LINE/RGB
Q7 2SD774
Q8 2SC2785
Q9 2SB734
Q6 2SC2785
Q12 2SC2785
Q13 2SC2785
Q14 2SC2785
Q15 2SB734
Q16 2SC2785
Q17 2SB734
Q18 2SC2785
Q19 DTC144WS
Q25 DTC144WS
Q26 2SA844
Q27 2SC2785
Q28 2SC2785
Q29 2SC2785
Q30 2SC2785
D19 RD5.1ESB2
D30 RD11ESB2
D31 RD11ESB2
①
②
③
④
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TO BB BOARD BB-2
R
G
B
A
B
QA-14
TO BA BOARD BA-3
Y/VIDEO
C
YC/VIDEO
QA-15
TO D BOARD D-12
SYNC (2V P-P)
QA-16

no mark : VIDEO
( ) : S-VIDEO

QA (INPUT SELECTOR, MODE CONTROL, REG INPUT)

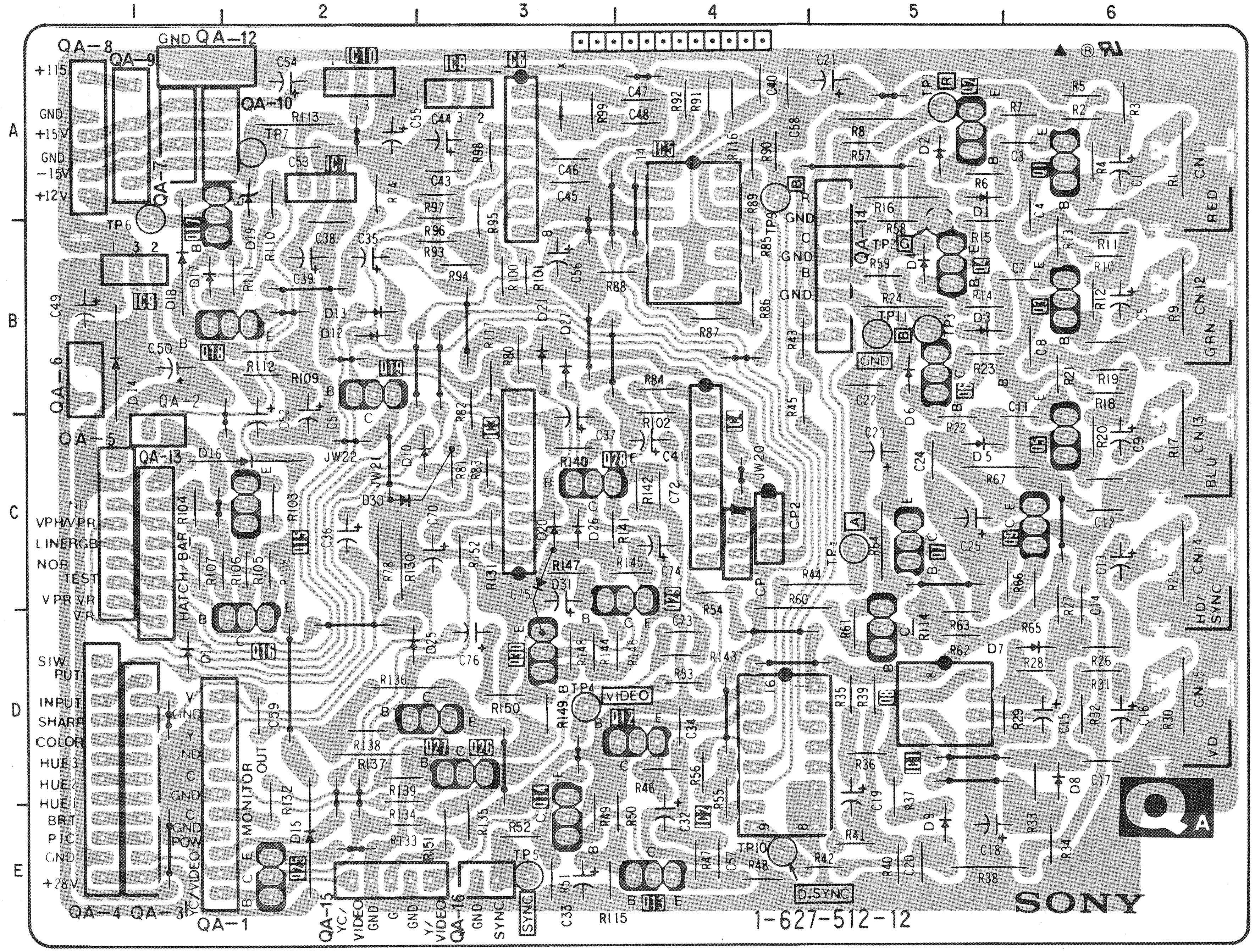
QB	IC201	μPC393C	VPR DISCRI
	202	CX-894	AUDIO SW
	203	LA2600	AUDIO CONT
	204	μPC1241H	AUDIO AMP
	205	RC78L09A	9V REG
	206	μPC78M12H	12V REG
	207	μPC78M12H	− 12V REG
	210	HD14053BP	VPR SW
	Q201	2SC2785	AUDIO BUFF
	202	2SC2785	AUDIO INH
	203	2SA1175	AUDIO INV
	204	2SC2785	VR BUFF
	205	DTC144WS	FAN SENS-1
	206	DTC144WS	FAN SENS-2
	210	2SC2785	C BUFF-1
	211	2SC2785	C BUFF-2
	D201	RD13ESB2	PROTECT-1
	202	1SS119	PROTECT-2
	203	1SS119	PROTECT-3
	204	1SS119	PROTECT-4
	205	1SS119	PROTECT-5
	206	1SS119	PROTECT-6

QA	IC1	μPC393C	SYNC MIX
	2	HD14053BP	MODE CONT.
	3	CX-894	LINE SW
	4	CX-894	TEST SW
	5	μPC339C	MODE DISCRI
	6	CX-7948A	HATCH GEN
	7	RC78M09FA	9V REG
	8	NJM78M05A	5V REG
	9	μPC78M12H	RM 12V REG
	10	μPC78M12H	12V REG
	Q1	2SC2785	R BUFF
	2	2SC2785	R OUT
	3	2SC2785	G BUFF
	4	2SC2785	G OUT
	5	2SC2785	B BUFF
	6	2SC2785	B OUT
	7	2SD774	LIMIT BUFF
	8	2SC2785	RGB BLK
	9	2SB734	CLAMP BUFF
	12	2SC2785	SYNC BUFF
	13	2SC2785	SYNC AMP
	14	2SC2785	SYNC OUT
	15	2SB734	VPH SW
	16	2SC2785	VPH DRIVE
	17	2SB734	SW REG SW
	18	2SC2785	ON HOLD SW
	19	DTC144WS	TEST SW
	25	DTC144WS	YC/V SW
	26	2SA844	CROMA BUFF-1
	27	2SC2785	CROMA BUFF-2
	28	2SC2785	Y BUFF
	29	2SC2785	YC AMP
	30	2SC2785	M VIDEO BUFF
	D1	1SS119	R CLAMP
	2	1SS119	R LIMIT
	3	1SS119	G CLAMP
	4	1SS119	G LIMIT
	5	1SS119	B CLAMP
	6	1SS119	B LIMIT
	7	1SS119	HD CLAMP
	8	1SS119	VD CLAMP
	9	1SS119	SYNC DICRI
	10	1SS119	VIDEO SW
	11	1SS119	TEST SW
	12	1SS119	HATCH SW
	13	1SS119	BAR SW
	14	GP08D	REG PROTECT
	15	GP08D	VPR POWER
	16	GP08D	VPH POWER
	17	1SS119	KICK
	18	GP08D	SET UP
	19	RD5.1ESB2	PROTECT BIAS
	20	1SS119	PROT-1
	21	1SS119	PROT-2
	25	1SS119	VPR SW
	26	1SS119	PROT-3
	27	1SS119	PROT-4
	30	RD11ESB2	PROT
	31	RD11ESB2	PROT

QA [INPUT SELECTOR, MODE CONTROL, REG INPUT]

QB [VIDEO/AUDIO INPUT, AUDIO AMP, SPEAKER OUT]

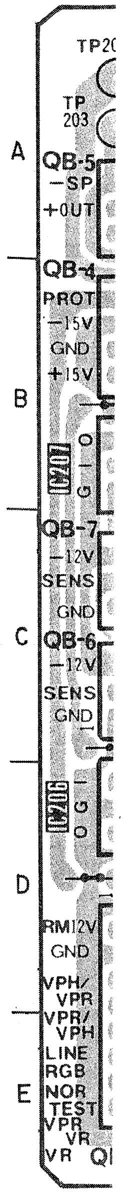
– QA BOARD –


1
2
3
4
5
6
A
B
C
D
E
QA-8
QA-9
QA-10
QA-12
QA-7
QA-6
QA-5
QA-2
QA-13
QA-4
QA-3
QA-1
QA-14
QA-15
QA-16
+115
GND
+15V
GND
−15V
+12V
TP6
TP7
TP1
TP2
TP3
TP4
TP5
TP9
TP10
TP11
VPH/VPR
LINERGB
NOR
TEST
VPR VR
VR
SIW PUT
INPUT
SHARP
COLOR
HUE3
HUE2
HUE1
BRT
PIC
GND
+28V
HATCH/BAR
MONITOR
OUT
POW
YC/VIDEO
YC/VIDEO
G
GND
Y/VIDEO
GND
SYNC
VIDEO
D.SYNC
CN11
RED
CN12
GRN
CN13
BLU
CN14
HD/SYNC
CN15
VD
IC1
IC2
IC5
IC6
IC7
IC8
IC9
IC10
SONY
1-627-512-12
QA

QA BOARD

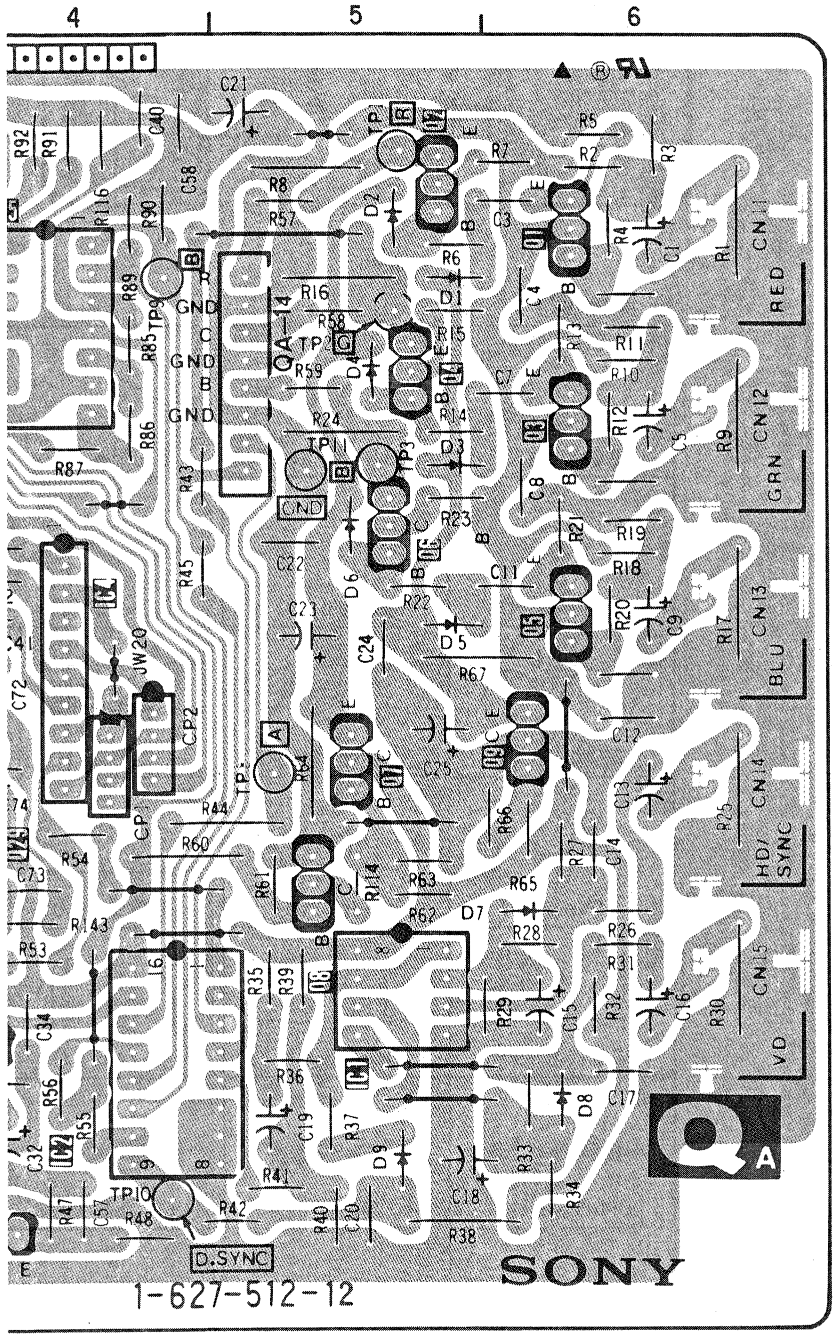
IC		DIODE	
IC1	D-5	D1	A-5
IC2	D-4	D2	A-5
IC3	C-3	D3	B-5
IC4	C-4	D4	B-5
IC5	A-4	D5	C-5
IC6	A-3	D6	B-5
IC7	A-2	D7	D-6
IC8	A-3	D8	D-6
IC9	B-1	D9	E-5
IC10	A-2	D10	B-2
TRANSISTOR		D11	D-1
Q1	A-6	D12	B-2
Q2	A-5	D13	B-2
Q3	B-6	D14	B-1
Q4	B-5	D15	E-2
Q5	C-6	D16	C-2
Q6	B-5	D17	B-1
Q7	C-5	D18	B-1
Q8	D-5	D19	A-2
Q9	C-6	D20	C-3
Q12	D-4	D21	B-3
Q13	E-4	D25	D-2
Q14	E-3	D26	C-3
Q15	C-2	D27	B-3
Q16	D-2	D30	C-2
Q17	B-1	D31	C-3
Q18	B-1		
Q19	B-2		
Q25	D-2		
Q26	D-3		
Q27	D-2		
Q28	C-3		
Q29	C-4		
Q30	D-3		

– QB


A
B
C
D
E
TP203
QB-5
−SP
+OUT
QB-4
PROT
−15V
GND
+15V
QB-7
−12V
SENS
GND
QB-6
−12V
SENS
GND
RM12V
GND
VPH/VPR
VPR/VPH
LINE
RGB
NOR
TEST
VPR
VR

3 INPUT]

QB [VIDEO/AUDIO INPUT, AUDIO AMP, SPEAKER OUT]


4
5
6
SONY
1-627-512-12
QA
CN11 RED
CN12 GRN
CN13 BLU
CN14 HD/SYNC
CN15 VD
D.SYNC
GND
TP9
TP10
TP11
TP12
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10

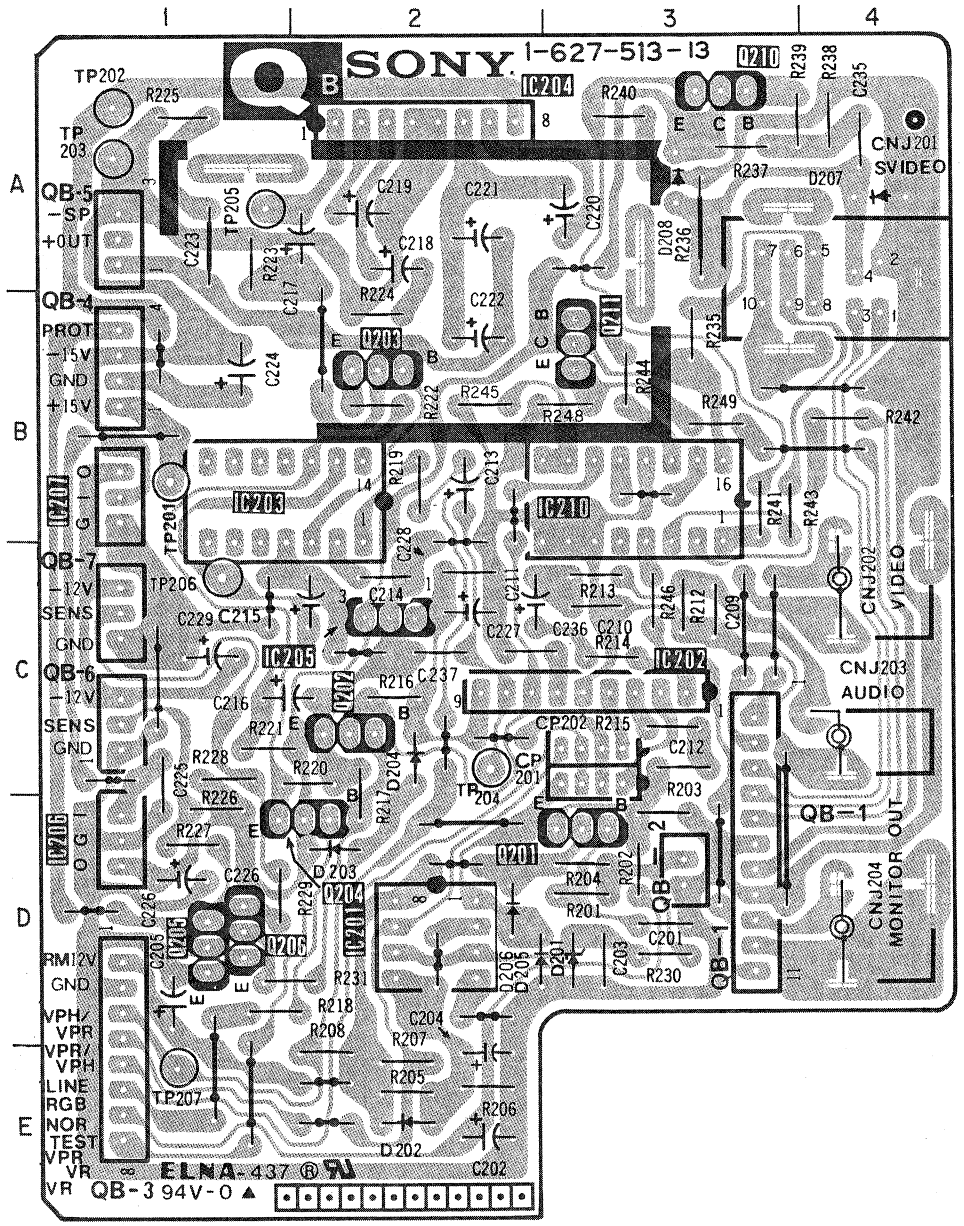
QA BOARD

IC	
IC1	D-5
IC2	D-4
IC3	C-3
IC4	C-4
IC5	A-4
IC6	A-3
IC7	A-2
IC8	A-3
IC9	B-1
IC10	A-2

TRANSISTOR	
Q1	A-6
Q2	A-5
Q3	B-6
Q4	B-5
Q5	C-6
Q6	B-5
Q7	C-5
Q8	D-5
Q9	C-6
Q12	D-4
Q13	E-4
Q14	E-3
Q15	C-2
Q16	D-2
Q17	B-1
Q18	B-1
Q19	B-2
Q25	D-2
Q26	D-3
Q27	D-2
Q28	C-3
Q29	C-4
Q30	D-3

DIODE	
D1	A-5
D2	A-5
D3	B-5
D4	B-5
D5	C-5
D6	B-5
D7	D-6
D8	D-6
D9	E-5
D10	B-2
D11	D-1
D12	B-2
D13	B-2
D14	B-1
D15	E-2
D16	C-2
D17	B-1
D18	B-1
D19	A-2
D20	C-3
D21	B-3
D25	D-2
D26	C-3
D27	B-3
D30	C-2
D31	C-3

– QB BOARD –


1
2
3
4
A
B
C
D
E
QB
SONY
1-627-513-13
TP202
TP203
QB-5
-SP
+OUT
QB-4
PROT
-15V
GND
+15V
QB-7
-12V
SENS
GND
QB-6
-12V
SENS
GND
RM12V
GND
VPH/VPR
VPR/VPH
LINE
RGB
NOR
TEST
VPR
VR
VR
QB-3
94V-0
ELNA-437
CNJ201 SVIDEO
CNJ202 VIDEO
CNJ203 AUDIO
CNJ204 MONITOR OUT
QB-1
QB-2
IC201
IC202
IC203
IC204
IC205
IC206
IC207
IC210
Q201
Q202
Q203
Q204
Q205
Q206
Q210
Q211
TP204
TP205
TP206
TP207
CP201
CP202

QB BOARD

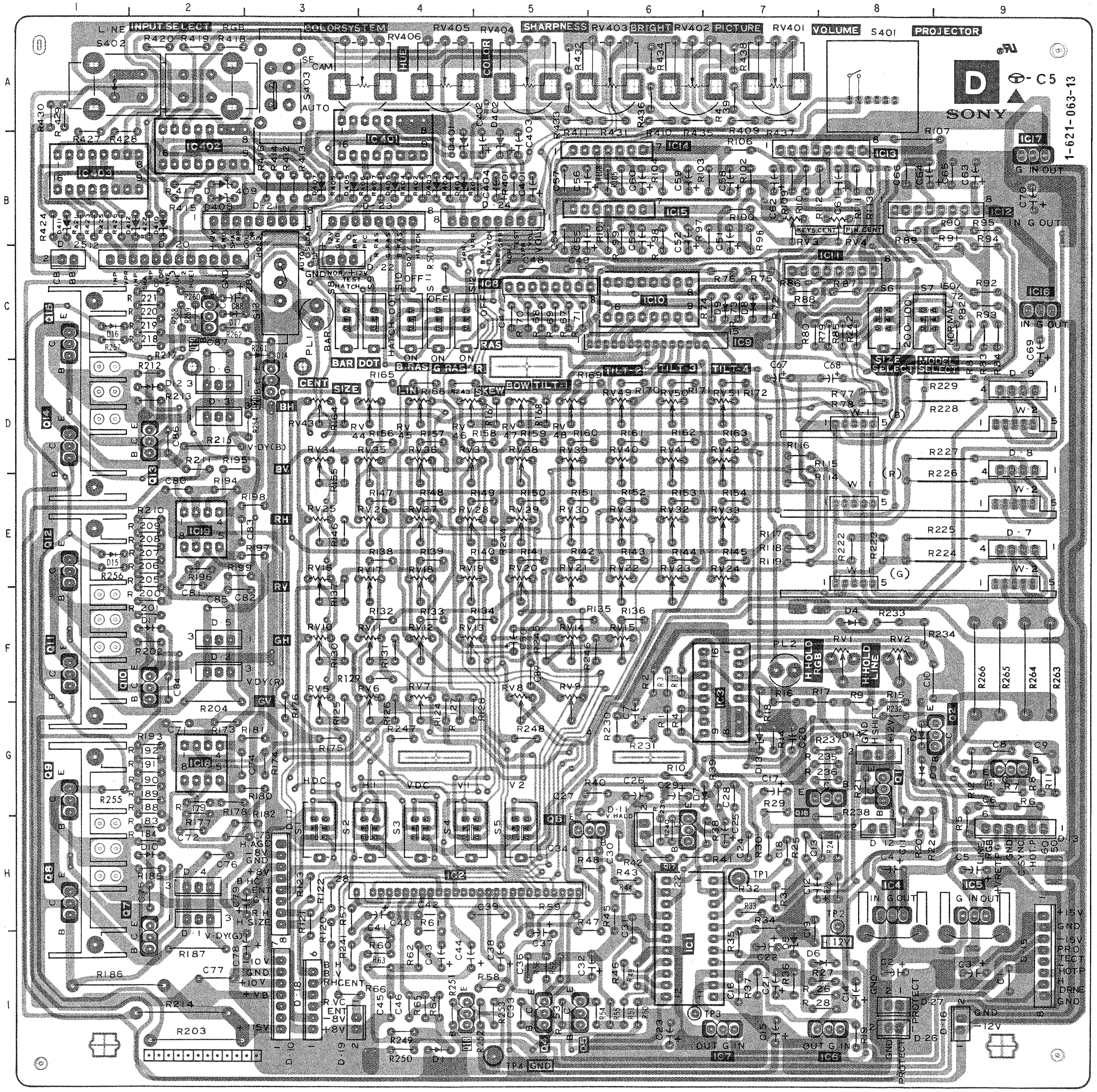
IC	
IC201	D-2
IC202	C-3
IC203	B-1
IC204	A-2
IC205	C-2
IC206	D-1
IC207	B-1
IC210	B-3

TRANSISTOR	
Q201	D-3
Q202	C-2
Q203	B-2
Q204	D-2
Q205	D-1
Q206	D-2
Q210	A-3
Q211	B-3

DIODE	
D201	D-3
D202	E-2
D203	D-2
D204	C-2
D205	D-2
D206	D-2

D [RGB PROCESSOR, H. V BLK, ABL]

– D BOARD –


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
I
INPUT SELECT
COLOR SYSTEM
HUE
COLOR
SHARPNESS
BRIGHT
PICTURE
VOLUME
PROJECTOR
S401
S402
S403
LINE
RGB
AUTO
CAM
SE
RV401
RV402
RV403
RV404
RV405
RV406
IC401
IC402
IC403
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
D
SONY
C5
1-621-063-13
KEYS CENT
PIN CENT
BAR
DOT
HATCH
OFF
ON
RAS
B-RAS
G-RAS
R
CENT
SIZE
LIN
SKEW
BOW
TILT-1
TILT-2
TILT-3
TILT-4
SIZE SELECT
MODE SELECT
NORMAL
BH
BV
RH
RV
GH
GV
H-HOLD RGB
H-HOLD LINE
H-SHIFT
V-DY(B)
V-DY(R)
V-DY(G)
TP1
TP2
TP3
TP4
GND
+15V
-15V
+12V
-12V
PROTECT
HOTP
DRNE
IN G OUT
OUT G IN
G IN OUT
(B)
(R)
(G)
W-1
W-2
D-7
D-8
D-9

D BOARD

IC	
IC1	1-6
IC2	H-4
IC3	F-7
IC4	H-8
IC5	H-9
IC6	I-8
IC7	I-7
IC8	C-5
IC9	C-7
IC10	C-6
IC11	C-8
IC12	B-9
IC13	B-8
IC14	B-6
IC15	B-6
IC16	B-9
IC17	B-9
IC18	G-2
IC19	E-2
IC401	B-4
IC402	B-2
IC403	B-1

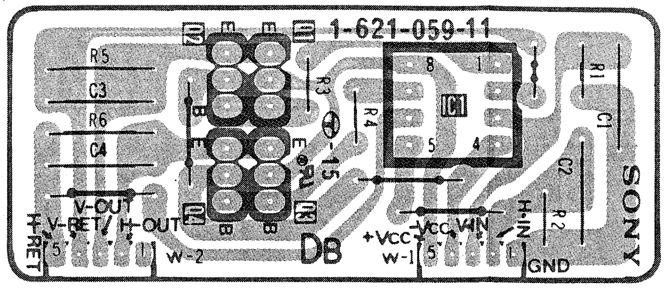
TRANSISTOR	
Q1	G-8
Q2	G-7
Q3	G-9
Q4	I-5
Q5	I-5
Q6	H-5
Q7	I-2
Q8	J-1
Q9	G-1
Q10	F-2
Q11	F-1
Q12	E-1
Q13	D-2
Q14	D-1
Q15	C-1
Q16	G-8
Q17	H-6
Q18	I-4
Q19	C-2
Q20	D-3

DIODE	
D1	I-4
D2	G-8
D3	G-8
D4	F-8
D5	I-7
D6	I-8
D7	G-6
D8	C-7
D9	C-7
D10	H-2
D11	F-2
D12	D-2
D13	G-7
D14	C-3
D15	E-1
D16	C-1
D17	C-2
D401	B-4
D402	B-5
D403	B-4
D404	B-4
D405	B-3
D406	B-4
D407	B-3
D408	B-2
D409	B-2
D410	B-2
D411	B-1
D412	B-2

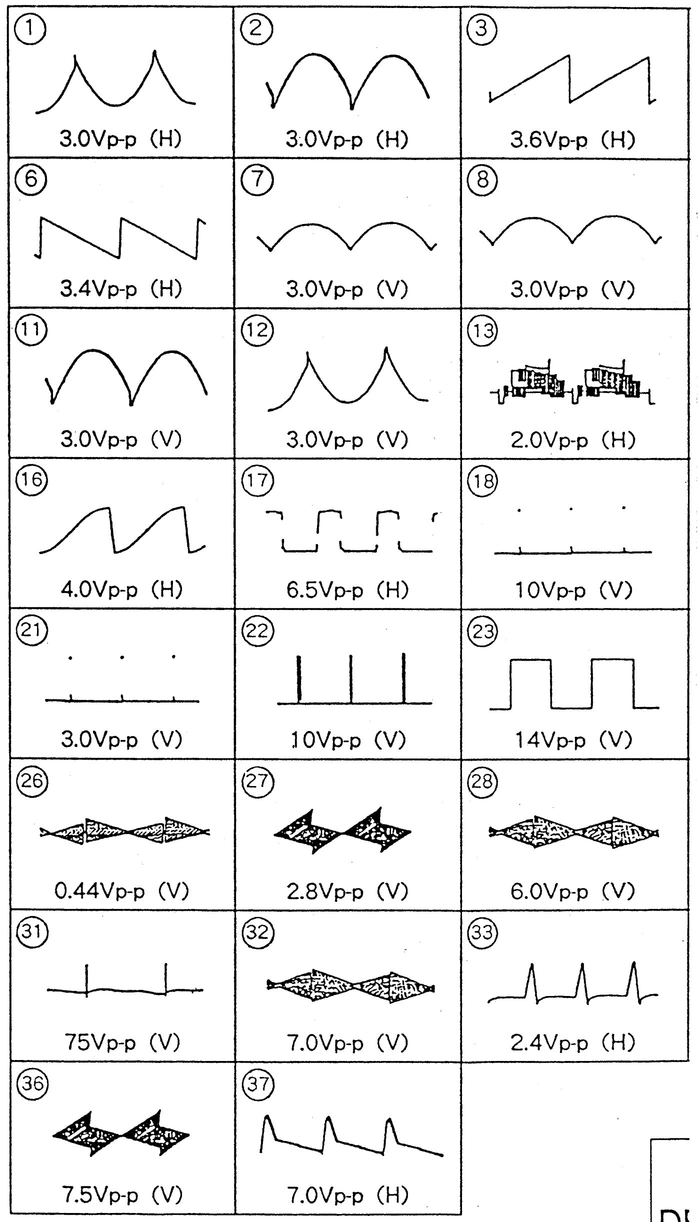
VARIABLE RESISTOR	
RV1	F-8
RV2	F-8
RV3	B-7
RV4	B-8
RV5	F-3
RV6	F-4
RV7	F-4
RV8	F-5
RV9	F-5
RV10	F-3
RV11	F-4
RV12	F-4
RV13	F-4
RV14	F-5
RV15	F-6
RV16	E-3
RV17	E-4
RV18	E-4
RV19	E-4
RV20	E-5
RV21	E-5
RV22	E-6
RV23	E-6
RV24	E-7
RV25	E-3
RV26	E-4
RV27	E-4
RV28	E-4
RV29	E-5
RV30	E-5
RV31	E-6
RV32	E-6
RV33	E-7
RV34	D-3
RV35	D-4
RV36	D-4
RV37	D-4
RV38	D-5
RV39	D-5
RV40	D-6
RV41	D-6
RV42	D-7
RV43	D-3
RV44	D-4
RV45	D-4
RV46	D-4
RV47	D-5
RV48	D-5
RV49	D-6
RV50	D-6
RV51	D-7
RV401	A-7
RV402	A-6
RV403	A-6
RV404	A-5
RV405	A-4
RV406	A-4

DB [SUB OUT]

– DB BOARD –

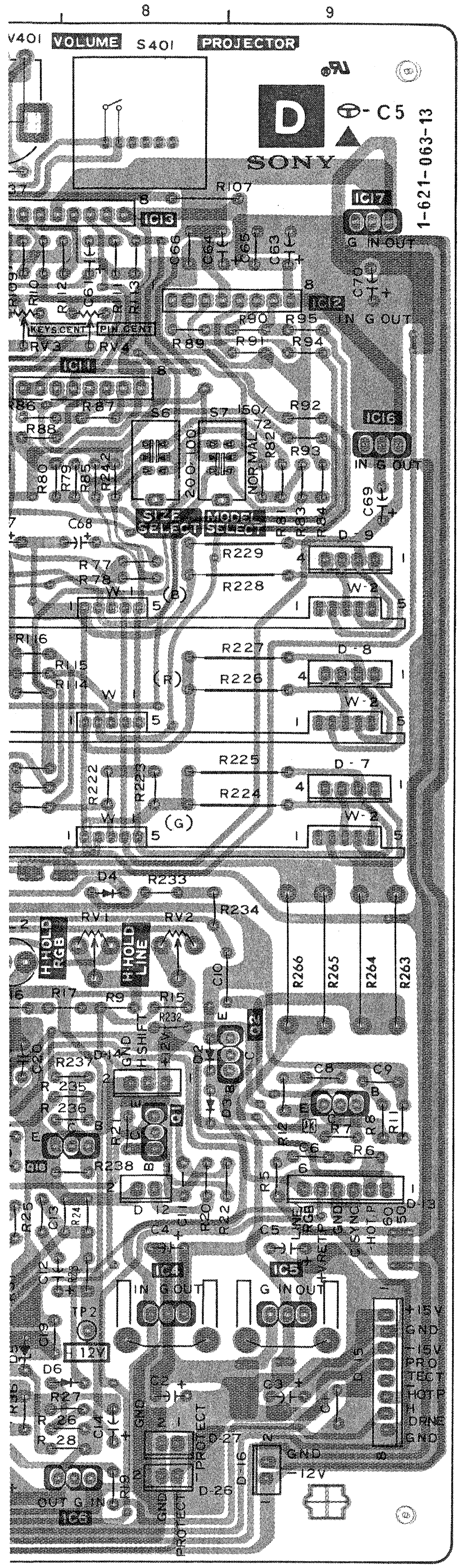

1-621-059-11
R5
C3
R6
C4
IC1
R1
C1
C2
R2
R3
R4
V-OUT
V-RET
H-OUT
H-RET
+Vcc
V-IN
H-IN
GND
W-1
W-2
DB
SONY

D BOARD



- ▒ : Pattern from the side which enables seeing.
- ▓ : Pattern of the rear side.

BL]


8
9
VOLUME
S401
PROJECTOR
D
SONY
C5
1-621-063-13
IC7
IC13
IC12
G IN OUT
IN G OUT
IC11
KEYS CENT
PIN CENT
IC16
IN G OUT
SIZE SELECT
MODEL SELECT
NORMAL 1/2
R229
R228
(B)
W-2
D-9
D-8
(R)
D-7
(G)
R233
RV1
RV2
H.HOLD RGB
H.HOLD LINE
H SHIFT
IC4
IC5
IN G OUT
G IN OUT
PROTECT
IC6
OUT G IN
+15V
GND
-15V
PROTECT
HOT P
DRIVE
GND
-12V

DB

[SUB OUT]

D BOARD

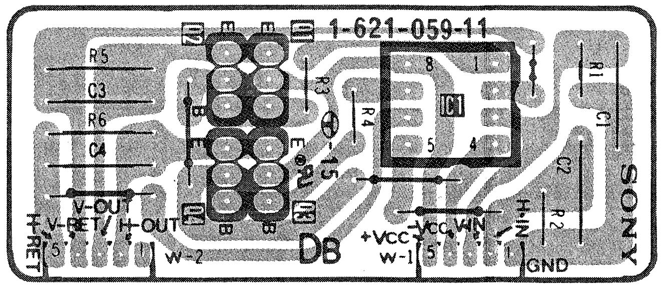
IC	
IC1	1-6
IC2	H-4
IC3	F-7
IC4	H-8
IC5	H-9
IC6	I-8
IC7	I-7
IC8	C-5
IC9	C-7
IC10	C-6
IC11	C-8
IC12	B-9
IC13	B-8
IC14	B-6
IC15	B-6
IC16	B-9
IC17	B-9
IC18	G-2
IC19	E-2
IC401	B-4
IC402	B-2
IC403	B-1

TRANSISTOR	
Q1	G-8
Q2	G-7
Q3	G-9
Q4	I-5
Q5	I-5
Q6	H-5
Q7	I-2
Q8	J-1
Q9	G-1
Q10	F-2
Q11	F-1
Q12	E-1
Q13	D-2
Q14	D-1
Q15	C-1
Q16	G-8
Q17	H-6
Q18	I-4
Q19	C-2
Q20	D-3

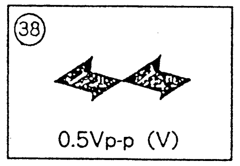
DIODE	
D1	I-4
D2	G-8
D3	G-8
D4	F-8
D5	I-7
D6	I-8
D7	G-6
D8	C-7
D9	C-7
D10	H-2
D11	F-2
D12	D-2
D13	G-7
D14	C-3
D15	E-1
D16	C-1
D17	C-2
D401	B-4
D402	B-5
D403	B-4
D404	B-4
D405	B-3
D406	B-4
D407	B-3
D408	B-2
D409	B-2
D410	B-2
D411	B-1
D412	B-2

VARIABLE RESISTOR	
RV1	F-8
RV2	F-8
RV3	B-7
RV4	B-8
RV5	F-3
RV6	F-4
RV7	F-4
RV8	F-5
RV9	F-5
RV10	F-3
RV11	F-4
RV12	F-4
RV13	F-4
RV14	F-5
RV15	F-6
RV16	E-3
RV17	E-4
RV18	E-4
RV19	E-4
RV20	E-5
RV21	E-5
RV22	E-6
RV23	E-6
RV24	E-7
RV25	E-3
RV26	E-4
RV27	E-4
RV28	E-4
RV29	E-5
RV30	E-5
RV31	E-6
RV32	E-6
RV33	E-7
RV34	D-3
RV35	D-4
RV36	D-4
RV37	D-4
RV38	D-5
RV39	D-5
RV40	D-6
RV41	D-6
RV42	D-7
RV43	D-3
RV44	D-4
RV45	D-4
RV46	D-4
RV47	D-5
RV48	D-5
RV49	D-6
RV50	D-6
RV51	D-7
RV401	A-7
RV402	A-6
RV403	A-6
RV404	A-5
RV405	A-4
RV406	A-4

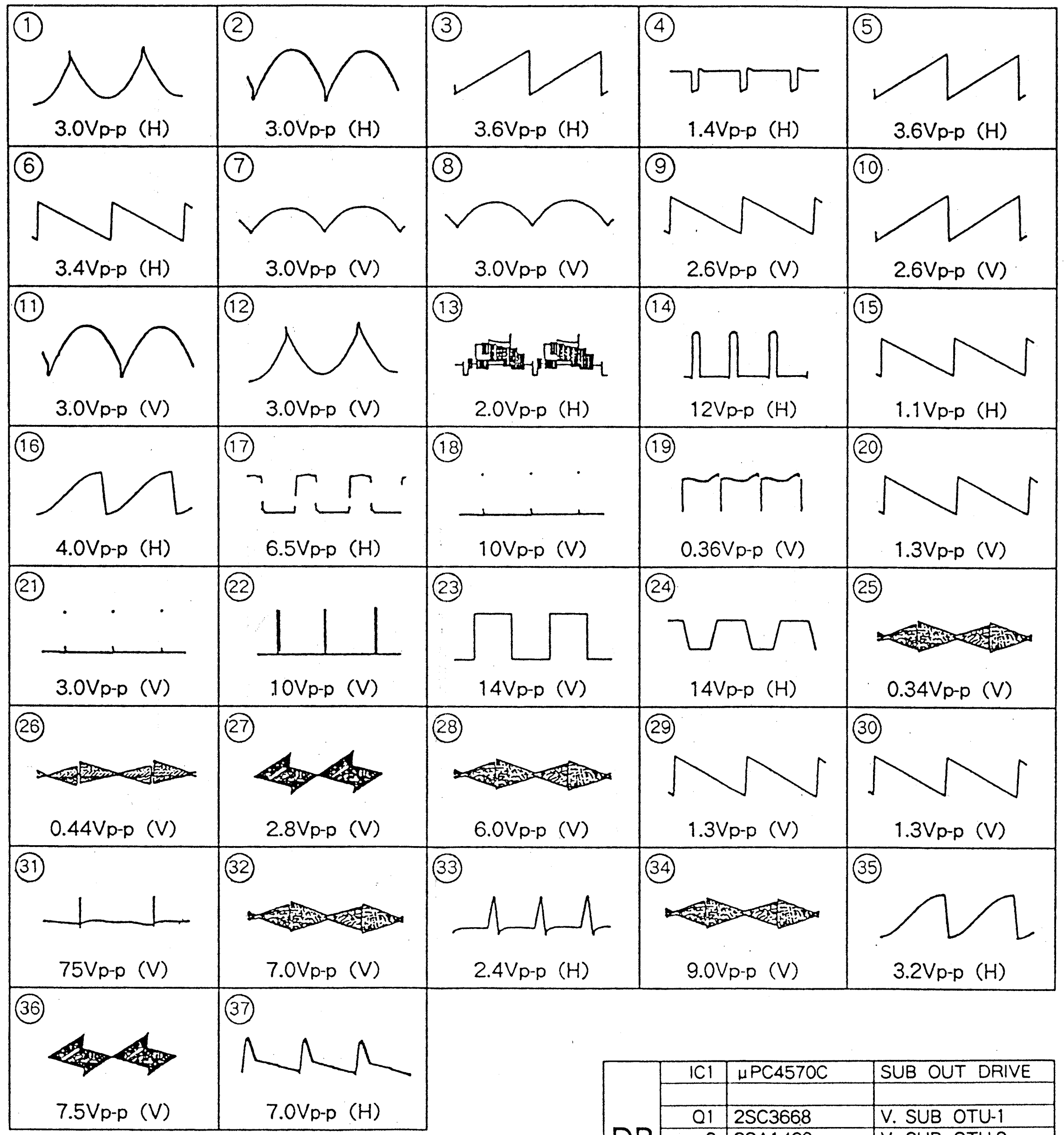
– DB BOARD –


1-621-059-11
R5
C3
R6
C4
Q2
Q1
Q4
Q3
R3
R4
IC1
8
1
5
4
R1
C1
C2
R2
SONY
V-OUT
H-RET
V-RET
H-OUT
W-2
DB
+VCC
-VCC
V-IN
H-IN
W-1
GND
5
1

DB BOARD



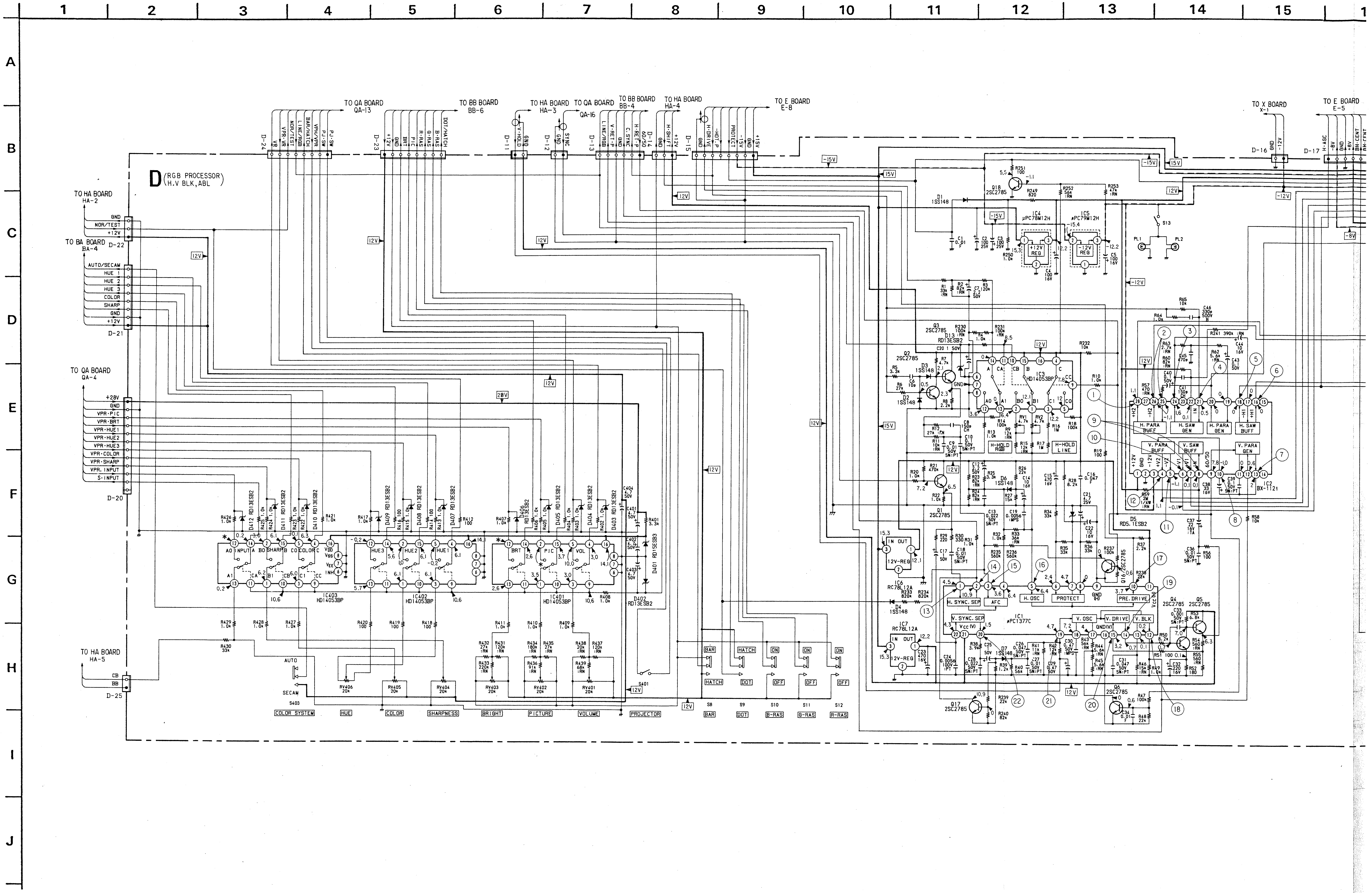
D BOARD

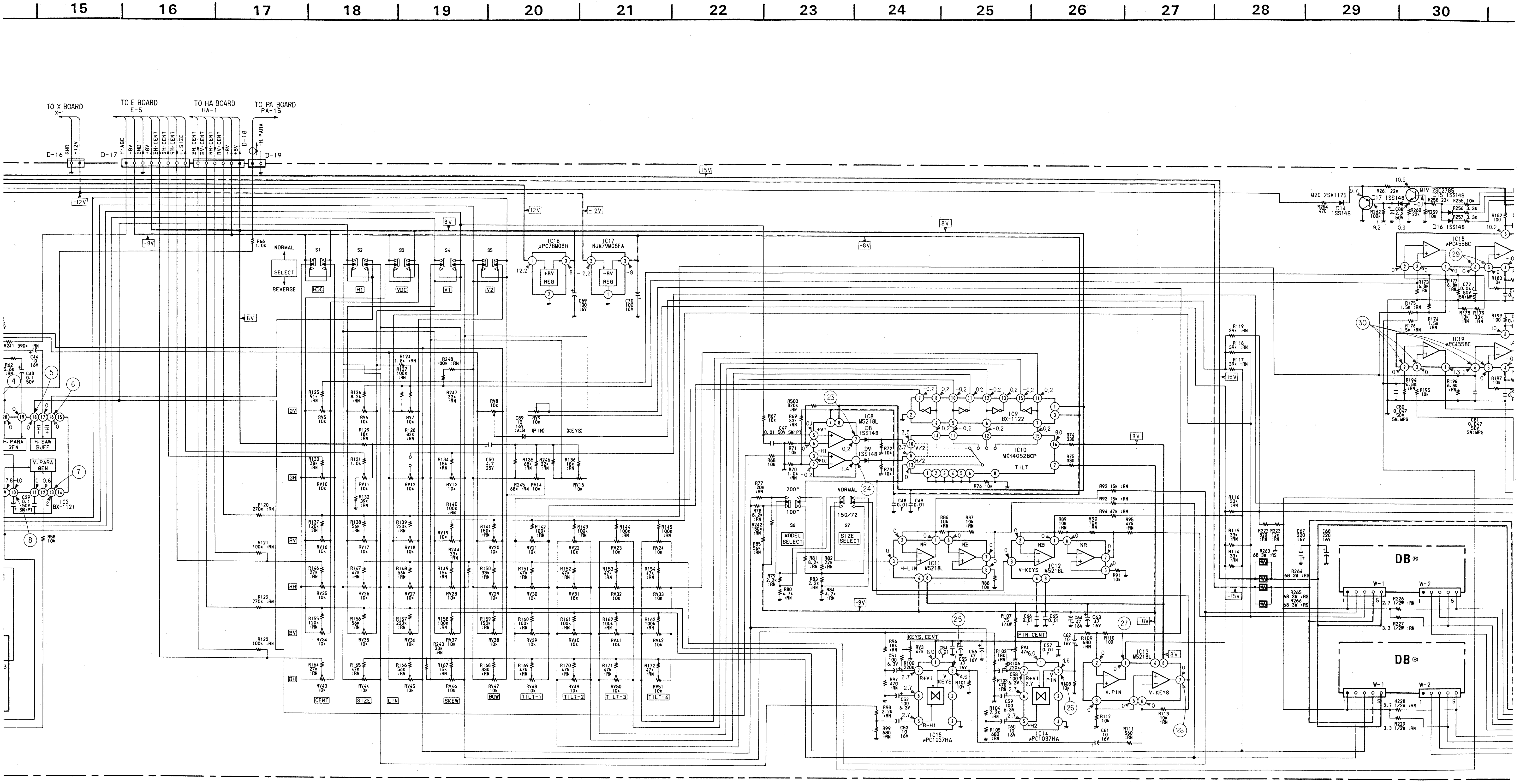


DB	IC1	μPC4570C	SUB OUT DRIVE
	Q1	2SC3668	V. SUB OTU-1
	2	2SA1428	V. SUB OTU-2
	3	2SC3668	H. SUB OTU-1
	4	2SA1428	H. SUB OTU-2

- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.

D	IC1	μPC1377C	H. V. OSC
	2	BX-1121	SIG GEN
	3	HD14053BP	MODE SW
	4	μPC78M12H	+ 12V REG
	5	μPC79M12H	− 12V REG
	6	RC78L12A	12V REG (H)
	7	RC78L12A	12V REG (V)
	8	M5218L	HALF H. V.
	9	BX-1122	TILT BUFF
	10	MC14052BCP	TILT SW
	11	M5218L	H. LIN BUFF
	12	M5218L	V. KEYS BUFF
	13	M5218L	V. PIN AMP
	14	μPC1037HA	V. PIN GEN
	15	μPC1037HA	KEYS GEN
	16	μPC78M08H	+ 8V REG
	17	NJM79M08FA	− 8V REG
	18	μPC4558C	V. AMP MAIN
	19	μPC4558C	V. AMP R/B
	401	HD14053BP	REMOTE SW-1
	402	HD14053BP	REMOTE SW-2
	403	HD14053BP	REMOTE SW-3
	Q1	2SC2785	SYNC BUFF
	2	2SC2785	H. PULSE AMP
	3	2SC2785	H. PULSE BUFF
	4	2SC2785	V. SAW-1
	5	2SC2785	V. SAW-2
	6	2SC2785	V. SIZE 50-60
	7	2SC2383	V. DRIVE-G
	8	2SD1406	V. OUT (G)-1
	9	2SB1015	V. OUT (G)-2
	10	2SC2383	V. DRIVE-R
	11	2SD1406	V. OUT (R)-1
	12	2SB1015	V. OUT (R)-2
	13	2SC2383	V. DRIVE-B
	14	2SD1406	V. OUT (B)-1
	15	2SB1015	V. OUT (B)-2
	16	2SC2785	PAL H. SENT
	17	2SC2785	V. SYNC. SEP
	18	2SC2785	− 12V° PROT
	19	2SC2785	V. OUT PROT-1
	20	2SA1175	V. OUT PROT-2
	D1	1SS148	PROTECT
	2	1SS148	H. PULSE CLIP
	3	1SS148	SPEED UP
	4	1SS148	TEST H. CENT
	5	RD5.1ESB2	HOLD DOWN REG
	6	1SS148	H. OSC. LIMIT
	7	1SS148	VD-SW
	8	1SS148	HALF. V-SW
	9	1SS148	HALF. H-SW
	10	1SS148	V. BIAS (G)
	11	1SS148	V. BIAS (R)
	12	1SS148	V. BIAS (B)
	13	RD13ESB2	SW PROT-13
	14	1SS148	V. OUT PROT-1
	15	1SS148	V. OUT PROT-2
	16	1SS148	V. OUT PROT-3
	17	1SS148	V. OUT PROT-4
	401	RD15ESB3	SW PROT-1
	402	RD13ESB2	SW PROT-2
	403	RD13ESB2	SW PROT-3
	404	RD13ESB2	SW PROT-4
	405	RD13ESB2	SW PROT-5
	406	RD13ESB2	SW PROT-6
	407	RD13ESB2	SW PROT-7
	408	RD13ESB2	SW PROT-8
	409	RD13ESB2	SW PROT-9
	410	RD13ESB2	SW PROT-10
	411	RD13ESB2	SW PROT-11
	412	RD13ESB2	SW PROT-12


D (RGB PROCESSOR)
(H.V BLK, ABL)
TO HA BOARD HA-2
TO BA BOARD BA-4
TO QA BOARD QA-4
TO HA BOARD HA-5
TO QA BOARD QA-13
TO BB BOARD BB-6
TO HA BOARD HA-3
TO QA BOARD QA-16
TO BB BOARD BB-4
TO HA BOARD HA-4
TO E BOARD E-8
TO X BOARD X-1
TO E BOARD E-5
IC403 HD14053BP
IC402 HD14053BP
IC401 HD14053BP
IC1 μPC1377C
IC2 BX-1121
IC3 HD14053BP
IC4 μPC78M12H
IC5 μPC79M12H
IC6 RC78L12A
IC7 RC78L12A
COLOR SYSTEM
HUE
COLOR
SHARPNESS
BRIGHT
PICTURE
VOLUME
PROJECTOR
BAR
DOT
B-RAS
G-RAS
R-RAS
H. SYNC. SEP
AFC
H. OSC
PROTECT
PRE. DRIVE
V. SYNC. SEP
V. OSC
V. DRIVE
V. BLK
H. PARA BUFF
H. SAW GEN
H. PARA GEN
V. PARA BUFF
V. SAW BUFF
V. PARA GEN
H-HOLD RGB
H-HOLD LINE


15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
TO X BOARD
X-1
GND
-12V
TO E BOARD
E-5
H-AGC
-8V
+8V
BH-CENT
RH-CENT
H-SIZE
TO HA BOARD
HA-1
BV-CENT
RV-CENT
TO PA BOARD
PA-15
H.PARA
D-16
D-17
D-18
D-19
15V
-12V
-8V
8V
IC16
μPC78M08H
+8V
REG
IC17
NJM79M08FA
-8V
REG
NORMAL
SELECT
REVERSE
S1
S2
S3
S4
S5
HDC
H1
VDC
V1
V2
C69
100
16V
C70
100
16V
H. PARA
GEN
H. SAW
BUFF
V. PARA
GEN
IC2
BX-1121
R241 390k
C44
10
16V
C43
0.1
50V
C39
0.1
50V
R120
270k
R121
100k
R122
270k
R123
100k
R58
10k
R66
1.0k
GV
GH
RV
RH
BV
BH
R124
1.8k
R248
100k
R127
100k
R125
91k
R126
8.2k
R247
33k
RV5
10k
RV6
10k
RV7
10k
RV8
10k
C89
10
16V
RV9
10k
(PIN)
(KEYS)
C50
4.7
25V
R135
68k
R246
22k
R136
18k
R245
68k
RV14
10k
RV15
10k
RV10
10k
RV11
10k
RV12
10k
RV13
10k
RV16
10k
RV17
10k
RV18
10k
RV19
10k
RV20
10k
RV21
10k
RV22
10k
RV23
10k
RV24
10k
RV25
10k
RV26
10k
RV27
10k
RV28
10k
RV29
10k
RV30
10k
RV31
10k
RV32
10k
RV33
10k
RV34
10k
RV35
10k
RV36
10k
RV37
10k
RV38
10k
RV39
10k
RV40
10k
RV41
10k
RV42
10k
RV43
10k
RV44
10k
RV45
10k
RV46
10k
RV47
10k
RV48
10k
RV49
10k
RV50
10k
RV51
10k
CENT
SIZE
LIN
SKEW
BOW
TILT-1
TILT-2
TILT-3
TILT-4
R500
820k
R67
10k
R69
33k
C47
0.01 50V
R71
10k
R68
10k
R70
1.0k
IC8
M5218L
D8
1SS148
D9
1SS148
R72
10k
R73
10k
IC9
BX-1122
IC10
MC14052BCP
TILT
R74
330
R75
330
R76 10k
V/2
H/2
R77
120k
R78
8.2k
R242
150k
R85
56k
R79
2.2k
R80
4.7k
R81
8.2k
R82
22k
R83
2.2k
R84
4.7k
200
100
S6
MODEL
SELECT
NORMAL
150/72
S7
SIZE
SELECT
C48
0.01
C49
0.01
R92 15k
R93 15k
R94 47k
R86
10k
R87
10k
R89
10k
R90
10k
R95
47k
NR
NB
IC11
M5218L
H-LIN
IC12
M5218L
V-KEYS
R88
10k
R91
10k
KEYS.CENT
PIN.CENT
R96
18k
RV3
47k
C54
0.01
C55
47
16V
C56
47
16V
C51
100
6.3V
R100
220k
R97
470
C52
100
6.3V
R98
2.2k
R99
680
C53
10
16V
R+V1
R-H1
KEYS
V
IC15
μPC1037HA
R101
10k
R102
18k
RV4
47k
C57
0.01
C58
100
6.3V
R106
220k
R103
470
R104
2.2k
C59
100
6.3V
R105
680
C60
10
16V
+H2
PIN
IC14
μPC1037HA
R108
10k
R107
75
1/4W
C66
0.01
C65
0.01
C64
47
16V
C63
47
16V
C62
10
16V
R109
680
R110
100
IC13
M5218L
V.PIN
V.KEYS
R112
10k
C61
10
16V
R111
560
R113
10k
Q20 2SA1175
Q19 2SC2785
D17 1SS148
D14
1SS148
D15 1SS148
D16 1SS148
R254
470
R261 22k
R262
100k
C88
50V
R260
22k
R259
10k
R258 22k
R255 10k
R256 3.3k
R257 3.3k
R182
100
IC18
μPC4558C
R173
6.8k
R177
6.8k
C72
0.047
50V
R180
10k
R175
1.5k
R174
1.5k
R178
10k
R179
33k
R176
1.5k
R199
100
IC19
μPC4558C
R194
6.8k
R195
10k
R196
6.8k
R197
10k
C80
0.047
50V
C81
0.047
50V
R119
39k
R118
39k
R117
39k
R116
33k
R115
33k
R114
33k
R222
820
R223
12k
R263
68 3W
R264
68 3W
R265
68 3W
R266
68 3W
C67
220
16V
C68
220
16V
DB (R)
DB (B)
W-1
W-2
R226
2.7 1/2W
R227
3.3 1/2W
R228
2.7 1/2W
R229
3.3 1/2W
④
⑤
⑥
⑦
⑧
㉓
㉔
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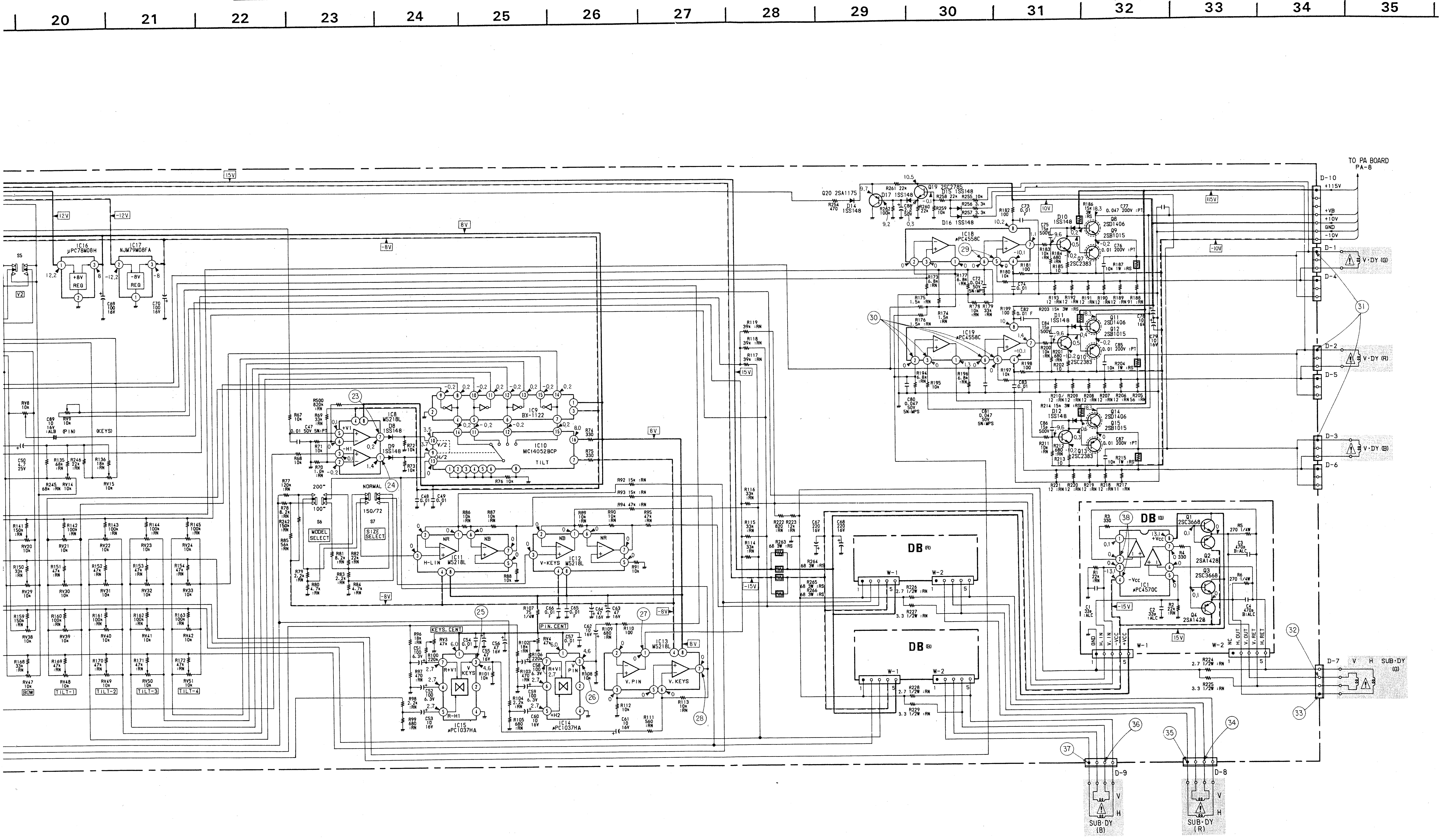
㉗
㉘
㉙
㉚


20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
15V
12V
-12V
8V
-8V
-15V
115V
-10V
10V
IC16 μPC78M08H
+8V REG
IC17 NJM79M08FA
-8V REG
S5
V2
IC8 M5218L
IC9 BX-1122
IC10 MC14052BCP
TILT
IC11 M5218L
H-LIN
IC12 M5218L
V-KEYS
NR
NB
S6 MODEL SELECT
S7 SIZE SELECT
NORMAL
150/72
200°
100°
KEYS.CENT
PIN.CENT
IC15 μPC1037HA
IC14 μPC1037HA
IC13 M5218L
V.PIN
V.KEYS
R+V1
R-H1
+H2
(PIN)
(KEYS)
BOW
TILT-1
TILT-2
TILT-3
TILT-4
Q20 2SA1175
Q19 2SC2785
D15 1SS148
D16 1SS148
D17 1SS148
D14 1SS148
IC18 μPC4558C
IC19 μPC4558C
Q8 2SD1406
Q9 2SB1015
Q7 2SC2383
Q11 2SD1406
Q12 2SB1015
Q10 2SC2383
Q14 2SD1406
Q15 2SB1015
Q13 2SC2383
D10 1SS148
D11 1SS148
D12 1SS148
DB (R)
DB (B)
DB (G)
W-1
W-2
IC1 μPC4570C
Q1 2SC3668
Q2 2SA1428
Q3 2SC3668
Q4 2SA1428
GND
H.IN
V.IN
-VCC
+VCC
NC
H.OUT
V.OUT
V.RET
H.RET
TO PA BOARD PA-8
D-10
+115V
+VB
+10V
GND
-10V
D-1
D-4
D-2
D-5
D-3
D-6
D-7
D-8
D-9
V·DY (G)
V·DY (R)
V·DY (B)
SUB·DY (G)
SUB·DY (B)
SUB·DY (R)
V
H
23
24
25
26
27
28
29
30
31
32
33
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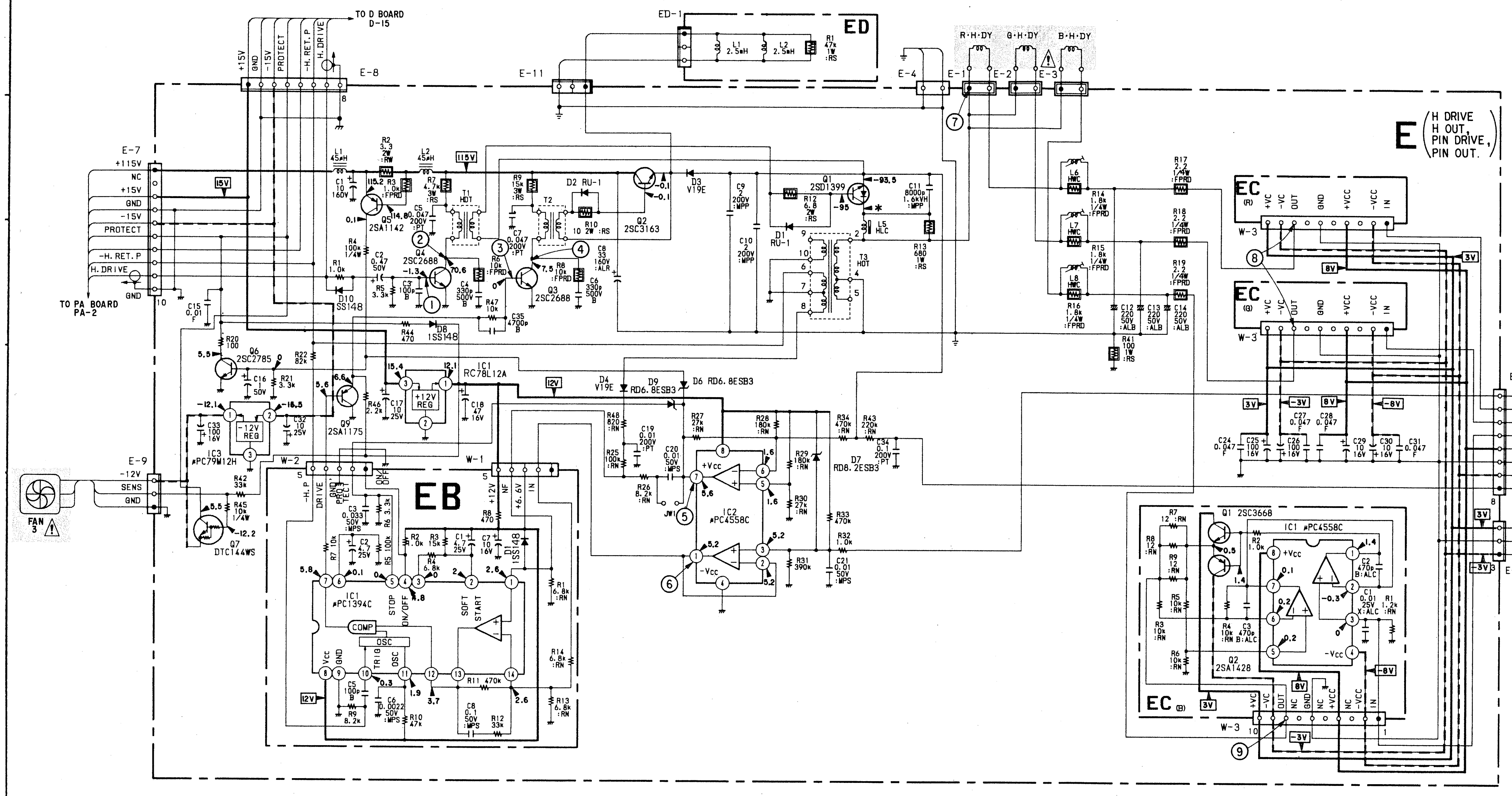
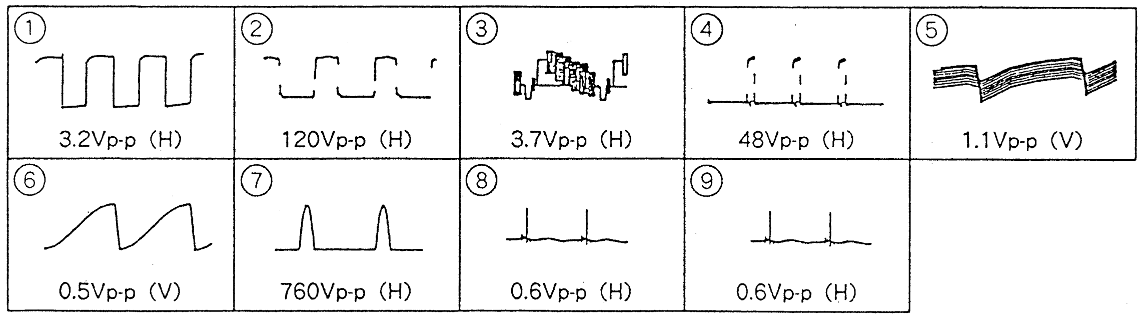
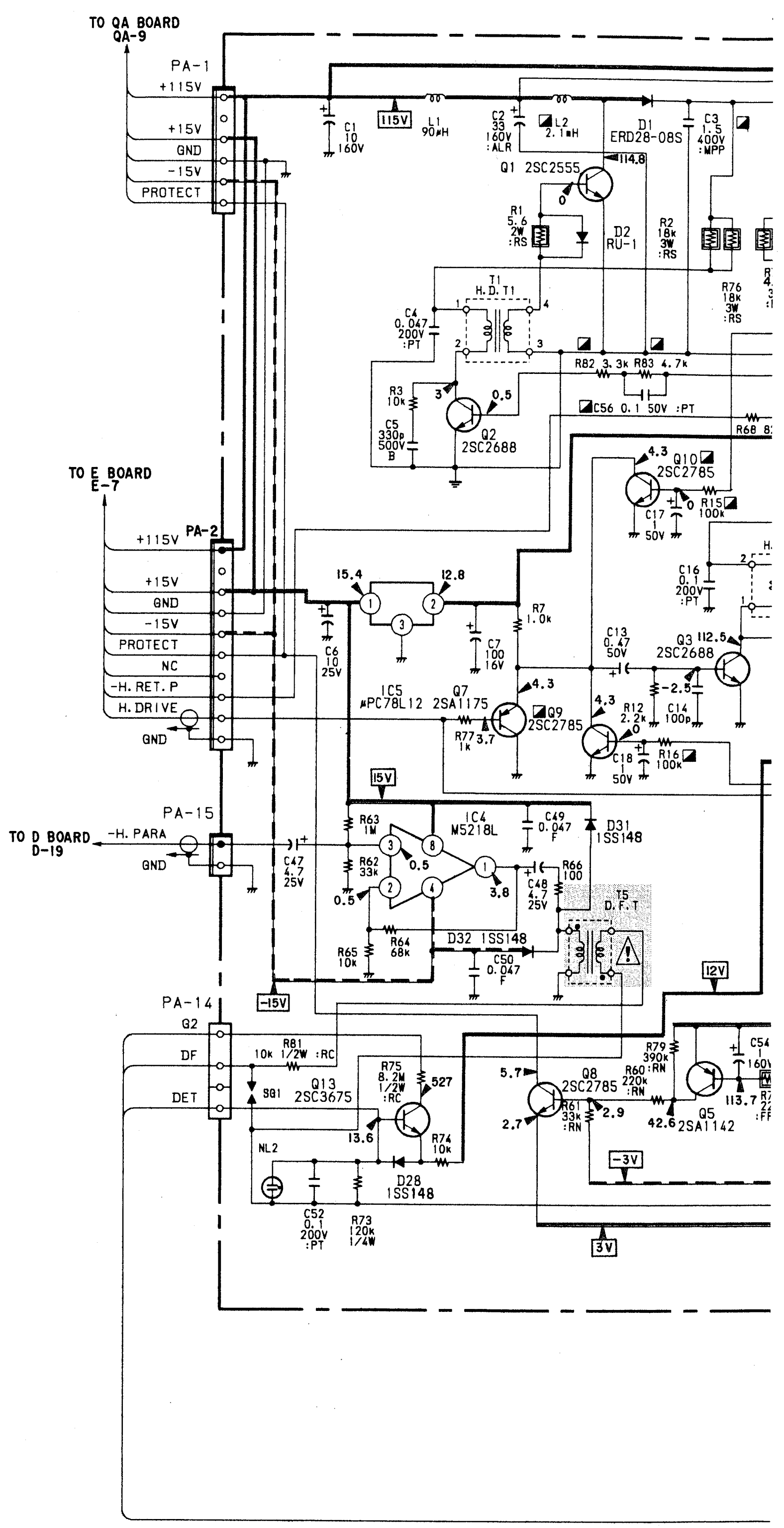
37
38

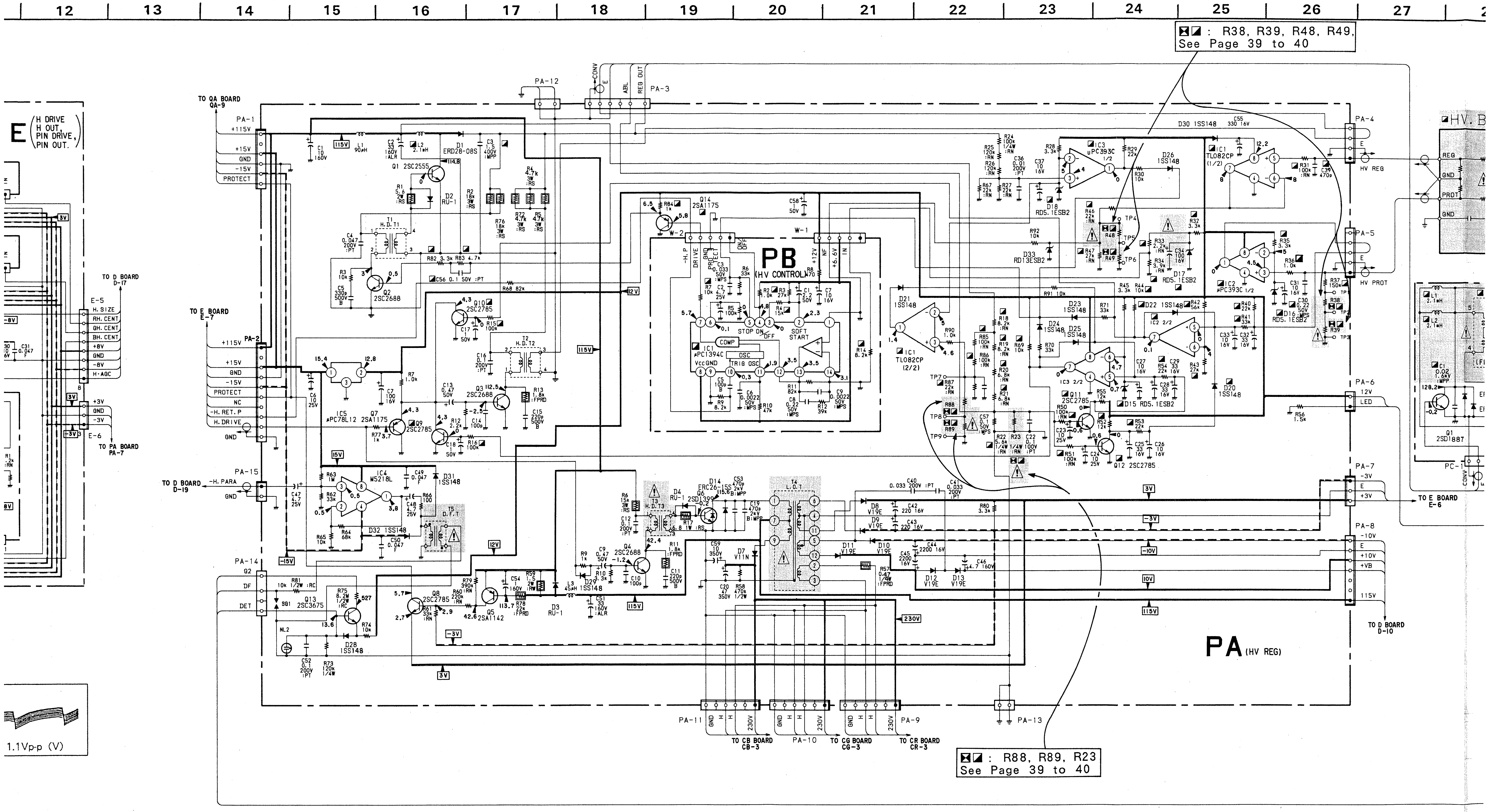

TO D BOARD D-15
+15V
GND
-15V
PROTECT
-H. RET. P
H. DRIVE
E-8
E-11
ED-1
ED
L1 2.5mH
L2 2.5mH
R1 47k 1W :RS
E-4
E-1
E-2
E-3
R·H·DY
G·H·DY
B·H·DY
E
H DRIVE
H OUT,
PIN DRIVE,
PIN OUT.
E-7
+115V
NC
+15V
GND
-15V
PROTECT
-H. RET. P
H. DRIVE
GND
TO PA BOARD PA-2
Q1 2SD1399
Q2 2SC3163
Q3 2SC2688
Q4 2SC2688
Q5 2SA1142
Q6 2SC2785
Q7 DTC144WS
Q9 2SA1175
T1 HDT
T3 HOT
D1 RU-1
D2 RU-1
D3 V19E
D4 V19E
D6 RD6.8ESB3
D7 RD8.2ESB3
D8 1SS148
D9 RD6.8ESB3
D10 1SS148
IC1 RC78L12A
IC2 μPC4558C
IC3 μPC79M12H
+12V REG
-12V REG
E-9
-12V
SENS
GND
FAN 3
W-2
W-1
EB
IC1 μPC1394C
COMP
OSC
STOP
ON/OFF
SOFT START
EC (R)
EC (G)
EC (B)
W-3
Q1 2SC3668
Q2 2SA1428
IC1 μPC4558C
TO D BOARD D-17
E-5
H. SIZE
RH. CENT
GH. CENT
BH. CENT
+8V
GND
-8V
H·AGC
+3V
GND
-3V
E-6
TO PA BOARD PA-7
①
②
③
④
⑤
⑥
⑦
⑧
⑨

E	IC1	RC78L12A	12V REG
	2	μPC4558C	H. PIN AMP
	3	μPC79M12H	- 12V REG
	Q1	2SD1399	H. OUT
	2	2SC3163	H. PIN OUT
	3	2SC2688	H. PIN DRIVE
	4	2SC2688	H. OUT DRIVE
	5	2SA1142	H. PIN OLP
	6	2SC2785	PROTECT SW-1
	7	DTC144WS	PROTECT SW-2
	9	2SA1175	H. PIN BUFF
	D1	RU-1	SPEED UP-1
	2	RU-1	SPEED UP-2
	3	V19E	- 100V CLAMP
	4	V19E	PULSE CLAMP
	6	RD6.8ESB3	6.8V ZENER
	7	RD8.2ESB3	H. PIN PROT-1
	8	1SS148	12V REG PROT
	9	RD6.8ESB3	H. PIN PROT-2
	10	1SS148	SPEED UP-3
EB	IC1	μPC1394C	H. PIN CONT
	D1	1SS148	PROTECT
EC	IC1	μPC4558C	H. CENT DRIVE
	Q1	2SC3668	H. CENT OUT-1
	2	2SA1428	H. CENT OUT-2

E BOARD




TO QA BOARD QA-9
PA-1
+115V
+15V
GND
-15V
PROTECT
Q1 2SC2555
D1 ERD28-08S
D2 RU-1
T1 H.D.T1
Q2 2SC2688
Q10 2SC2785
TO E BOARD E-7
PA-2
+115V
+15V
GND
-15V
PROTECT
NC
-H. RET. P
H. DRIVE
GND
IC5 μPC78L12
Q7 2SA1175
Q9 2SC2785
Q3 2SC2688
TO D BOARD D-19
PA-15
-H. PARA
GND
IC4 M5218L
D31 1SS148
D32 1SS148
T5 D.F.T
PA-14
G2
DF
DET
Q13 2SC3675
Q8 2SC2785
Q5 2SA1142
D28 1SS148



12
13
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18
19
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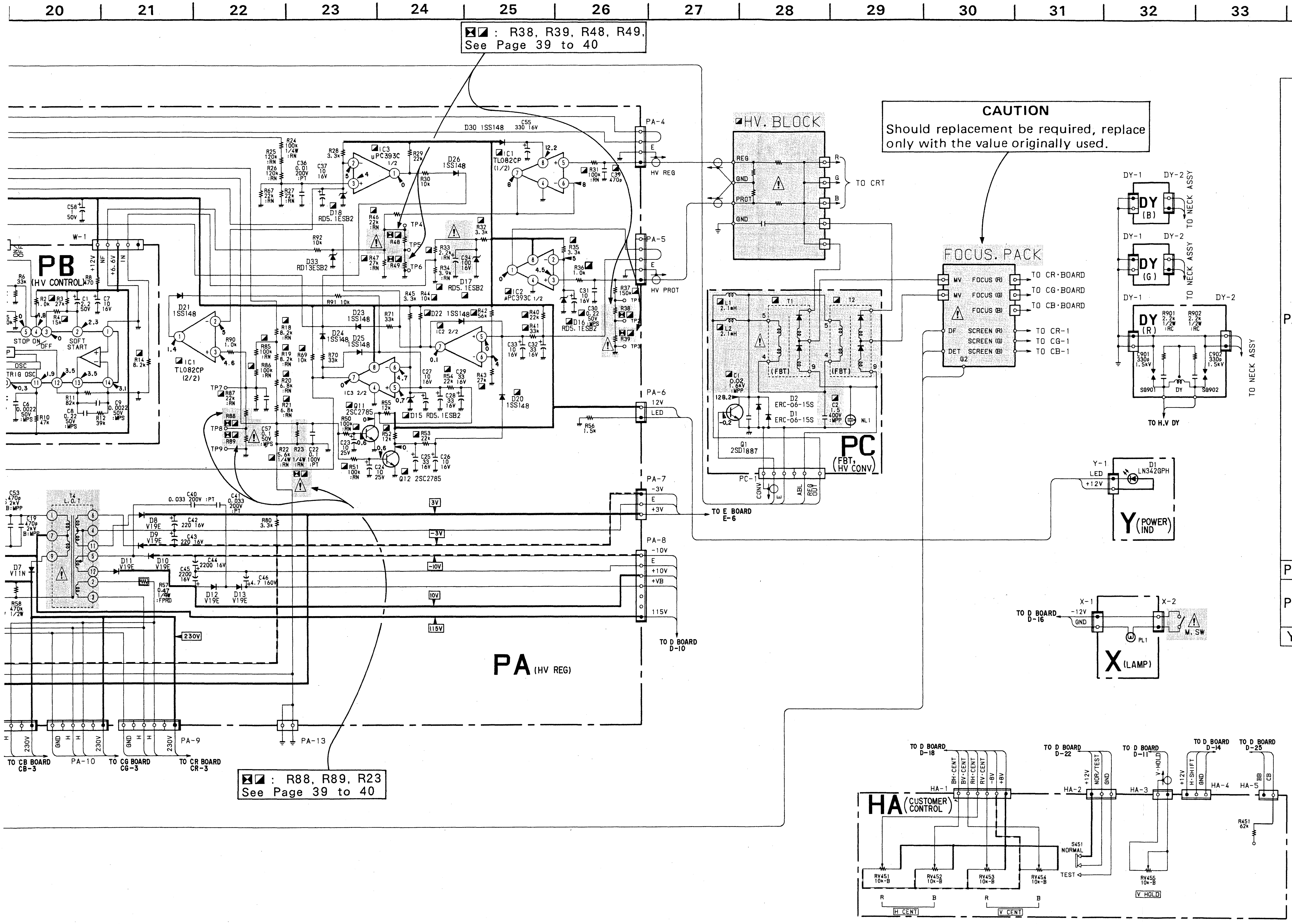
22
23
24
25
26
27
E (H DRIVE, H OUT, PIN DRIVE, PIN OUT.)
TO D BOARD D-17
E-5
H. SIZE
RH. CENT
GH. CENT
BH. CENT
+8V
GND
-8V
H-AGC
+3V
GND
-3V
E-6
TO PA BOARD PA-7
TO QA BOARD QA-9
PA-1
+115V
+15V
GND
-15V
PROTECT
TO E BOARD E-7
PA-2
+115V
+15V
GND
-15V
PROTECT
NC
-H. RET. P
H. DRIVE
GND
TO D BOARD D-19
PA-15
-H. PARA
GND
PA-14
G2
DF
DET
PA-12
PA-3
CONV
E
ABL
REG OUT
D1 ERD28-08S
Q1 2SC2555
D2 RU-1
T1 H.D.T1
Q2 2SC2688
Q10 2SC2785
T2 H.D.T2
Q3 2SC2688
IC5 μPC78L12
Q7 2SA1175
Q9 2SC2785
IC4 M5218L
D31 1SS148
T5 D.F.T
D32 1SS148
Q13 2SC3675
D28 1SS148
Q8 2SC2785
Q5 2SA1142
D3 RU-1
D29 1SS148
Q4 2SC2688
T3 H.D.T3
D4 RU-1
Q6 2SD1399
D14 ERC26-15S
D7 V11N
Q14 2SA1175
W-2
W-1
PB (HV CONTROL)
IC1 μPC1394C
COMP
OSC
TR18 OSC
STOP ON OFF
SOFT START
-H. P
DRIVE
PROTECT
+12V
NF
+6.6V
IN
T4 L.O.T
D8 V19E
D9 V19E
D11 V19E
D10 V19E
D12 V19E
D13 V19E
D21 1SS148
IC1 TL082CP (2/2)
D33 RD13ESB2
D18 RD5.1ESB2
IC3 μPC393C 1/2
D26 1SS148
D30 1SS148
IC1 TL082CP (1/2)
IC2 μPC393C 1/2
D17 RD5.1ESB2
D16 RD5.1ESB2
D23 1SS148
D24 1SS148
D25 1SS148
D22 1SS148
IC2 2/2
IC3 2/2
Q11 2SC2785
Q12 2SC2785
D15 RD5.1ESB2
D20 1SS148
TP4
TP5
TP6
TP7
TP8
TP9
TP1
TP2
TP3
PA-4
HV REG
PA-5
HV PROT
PA-6
12V
LED
PA-7
-3V
E
+3V
TO E BOARD E-6
PA-8
-10V
E
+10V
+VB
115V
TO D BOARD D-10
PA (HV REG)
PA-11
PA-10
PA-9
PA-13
GND
H
H
230V
TO CB BOARD CB-3
TO CG BOARD CG-3
TO CR BOARD CR-3
3V
-3V
-10V
10V
115V
230V
12V
15V
-15V
HV. B
REG
GND
PROT
PC-1
Q1 2SD1887
1.1Vp-p (V)

R38, R39, R48, R49, See Page 39 to 40

R88, R89, R23 See Page 39 to 40


20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
PB (HV CONTROL)
PA (HV REG)
PC (FBT, HV CONV)
HV. BLOCK
FOCUS. PACK
TO CRT
TO CR·BOARD
TO CG·BOARD
TO CB·BOARD
TO CR-1
TO CG-1
TO CB-1
DY (B)
DY (G)
DY (R)
DY-1
DY-2
TO NECK ASSY
TO H.V DY
Y (POWER IND)
X (LAMP)
HA (CUSTOMER CONTROL)
TO E BOARD E-6
TO D BOARD D-10
TO D BOARD D-16
TO D BOARD D-18
TO D BOARD D-22
TO D BOARD D-11
TO D BOARD D-14
TO D BOARD D-25
TO CB BOARD CB-3
TO CG BOARD CG-3
TO CR BOARD CR-3
PA-4
PA-5
PA-6
PA-7
PA-8
PA-9
PA-10
PA-13
HV REG
HV PROT
M. SW
H CENT
V CENT
V HOLD
L.O.T

■◪ : R38, R39, R48, R49,
See Page 39 to 40

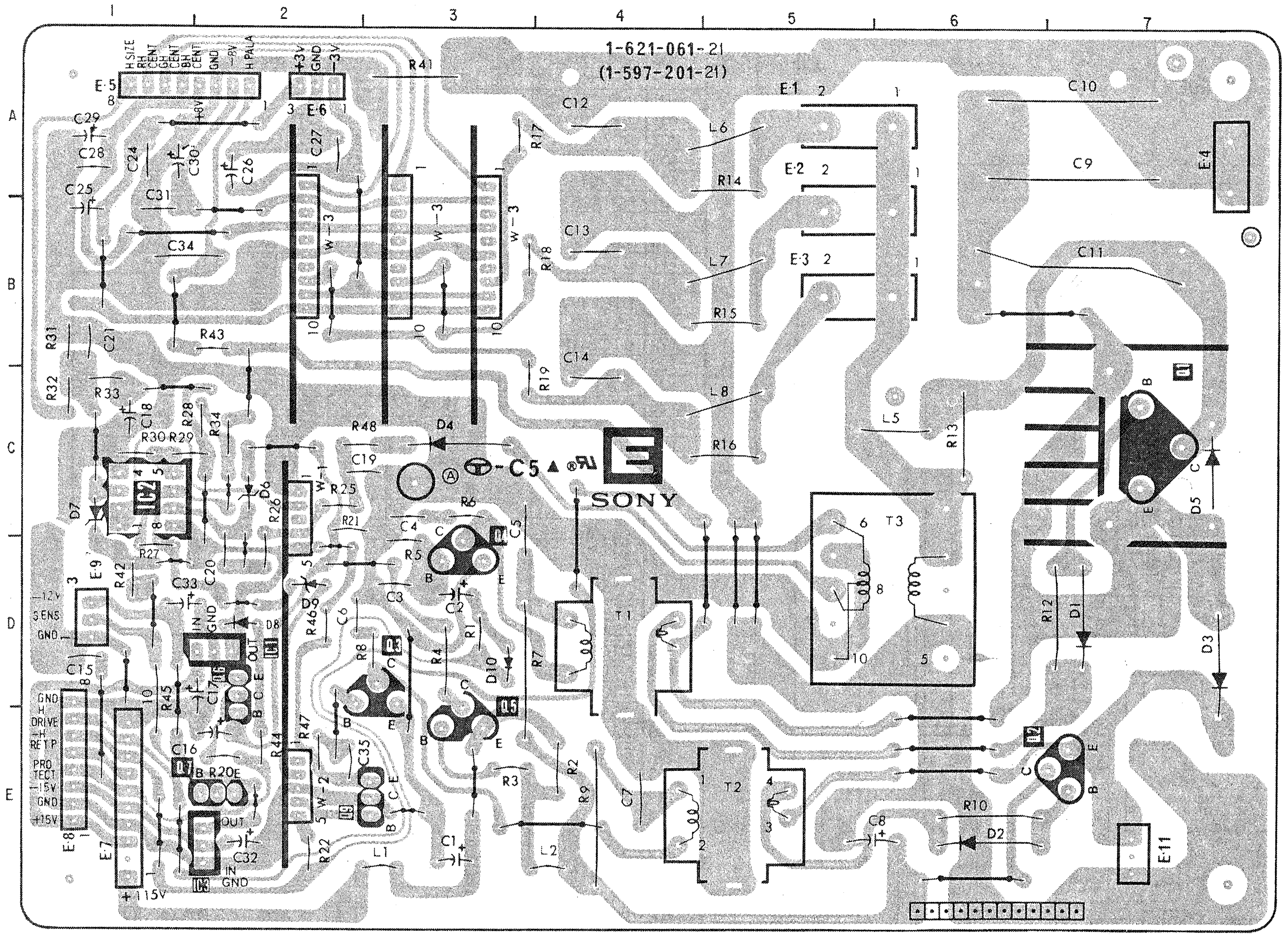
■◪ : R88, R89, R23
See Page 39 to 40

CAUTION
Should replacement be required, replace only with the value originally used.

PA	IC1	TL082CP	HV. REG DET
	2	µPC393C	HV. DET
	3	µPC393C	Σ IK DET
	4	M5218L	D FOCUS AMP
	5	µPC78L12	12V REG
	Q1	2SC2555	HV. REG
	2	2SC2688	HV. REG DRIVE
	3	2SC2688	H. DRIVE-1
	4	2SC2688	H. DRIVE-2
	5	2SD1399	CURRENT PROT
	6	2SA1175	CONV
	7	2SC2785	H. DRIVE BUFF
	8	2SC2785	PROT SW
	9	2SC2785	HV. PROT SW-1
	10	2SC2785	HV. PROT SW-2
	11	2SC2785	Σ IK PROT DET-1
	12	2SC2785	Σ IK PROT DET-2
	13	2SC3675	G2 CONT
	14	2SA1175	REG BUFF
	D1	ERD28-08S	HV. REG CLAMP
	2	RU-1	SPEED UP-1
	3	RU-1	PROTECT-1
	4	RU-1	SPEED UP-2
	7	V11N	+ 230V RECT
	8	V19E	+ 3V RECT
	9	V19E	− 3V RECT
	10	V19E	− 10V RECT
	11	V19E	+ 10V RECT
	12	V19E	V. STOPPER
	13	V19E	V. RECT
	14	ERC26-15S	DAMP-1
	15	RD5.1ESB2	Σ IK ZENER
	16	RD5.1ESB2	HV. PROT ZENER
	17	RD5.1ESB2	HV. REG ZENER
	18	RD5.1ESB2	REG OUT ZENER
	20	1SS148	SW-1
	21	1SS148	SW-5
	22	1SS148	PROT HOLD
	23	1SS148	SW-2
	24	1SS148	SW-3
	25	1SS148	Σ IK HOLD
	26	1SS148	SW-4
	28	1SS148	PROTECT-2
	29	1SS148	SPEED UP-3
	30	1SS148	
	31	1SS148	D. F. PROT-1
	32	1SS148	D. F. PROT-2
	33	RD13EB2	
PB	IC1	µPC1394C	HV. REG CONT
PC	Q1	2SD1887	HV. CONV
	D1	ERC06-15S	DAMP-1
	2	ERC06-15S	DAMP-2
Y	D1	GL-9NG2	POWER IND

E [H DRIVE, H OUT, PIN DRIVE, PIN OUT] **EB** [PIN MODE CONTROL] **EC** [V OUT] **ED** [NOISE FILTER] **PA** [HV REG] **PB** [HV

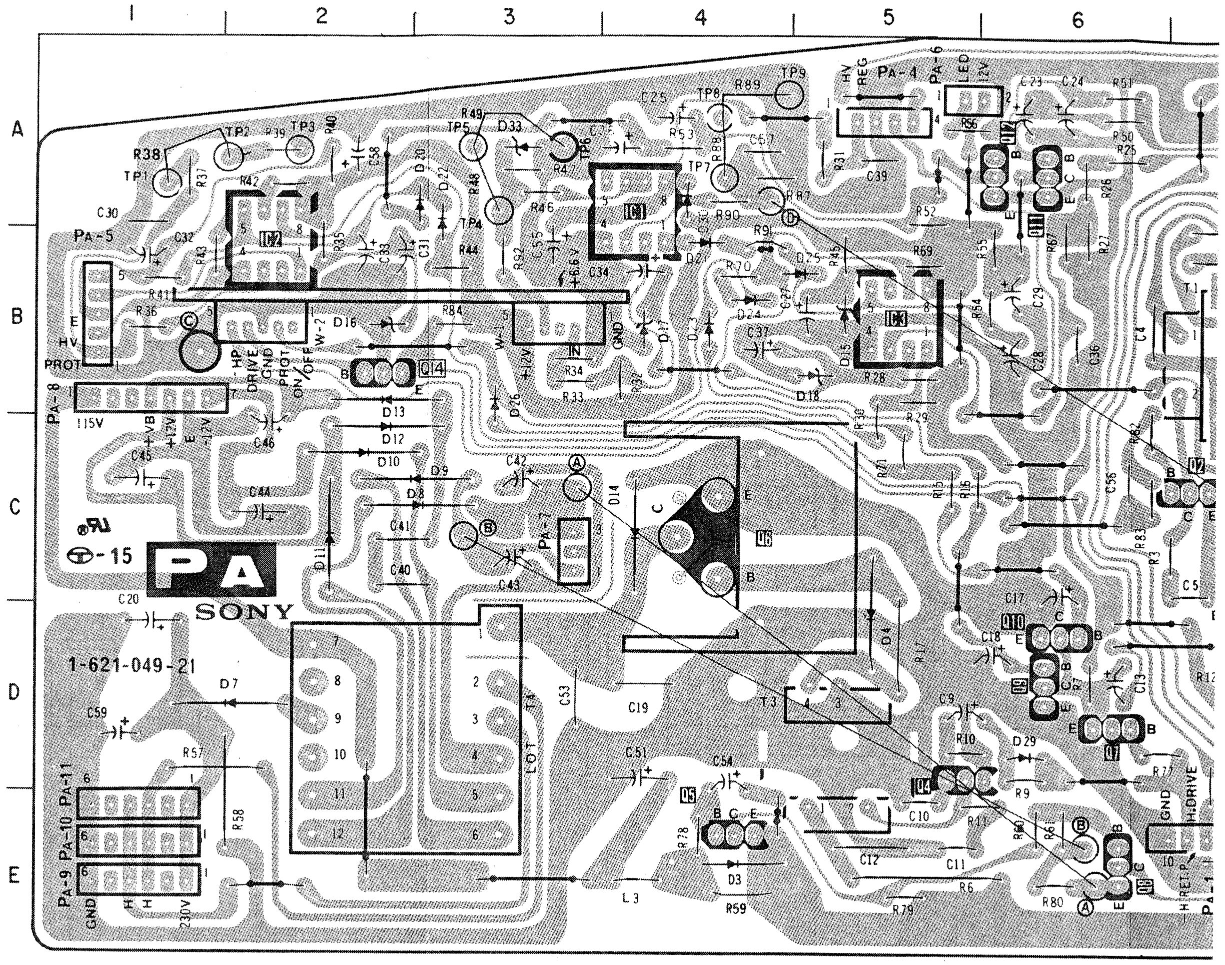
– E BOARD –


1-621-061-21
(1-597-201-21)
SONY

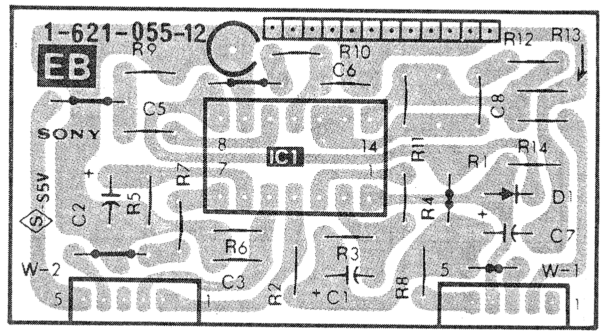
E BOARD

IC	
IC1	D-2
IC2	C-1
IC3	E-2
TRANSISTOR	
Q1	C-7
Q2	E-7
Q3	D-3
Q4	C-3
Q6	D-2
Q7	E-2
Q9	E-3
DIODE	
D1	D-7
D2	E-6
D3	D-7
D4	C-3
D6	C-2
D7	C-1
D8	D-2
D9	D-2
D10	D-3

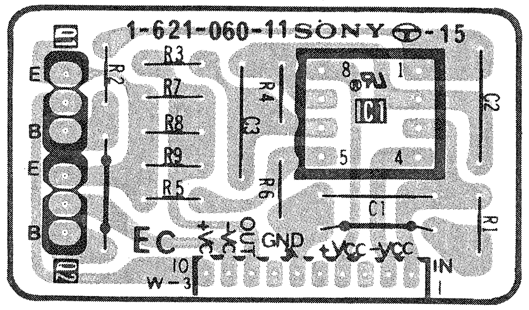
– PA BOARD –


1-621-049-21
PA
SONY

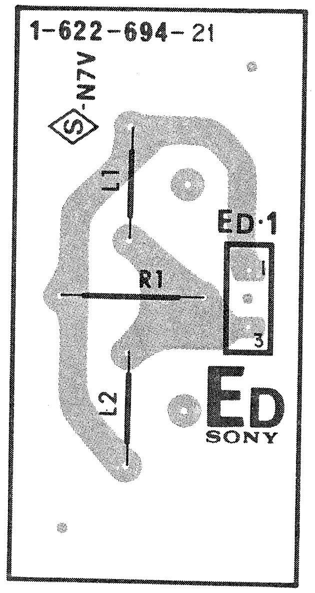
– EB BOARD –


1-621-055-12
EB
SONY

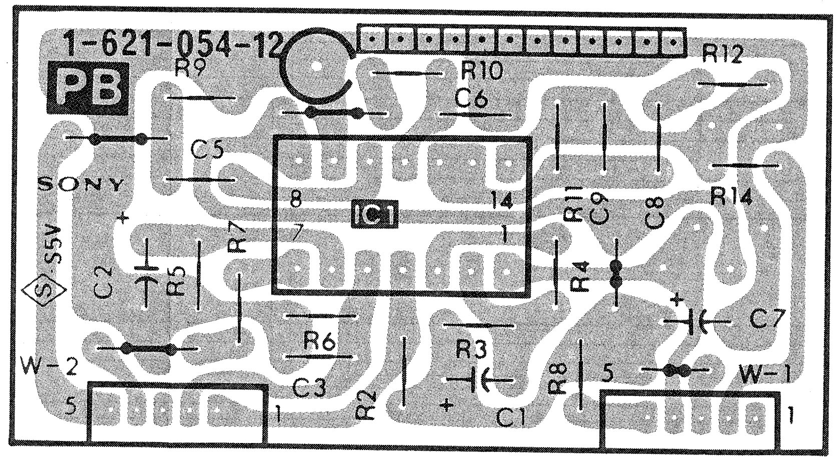
– EC BOARD –


1-621-060-11
SONY

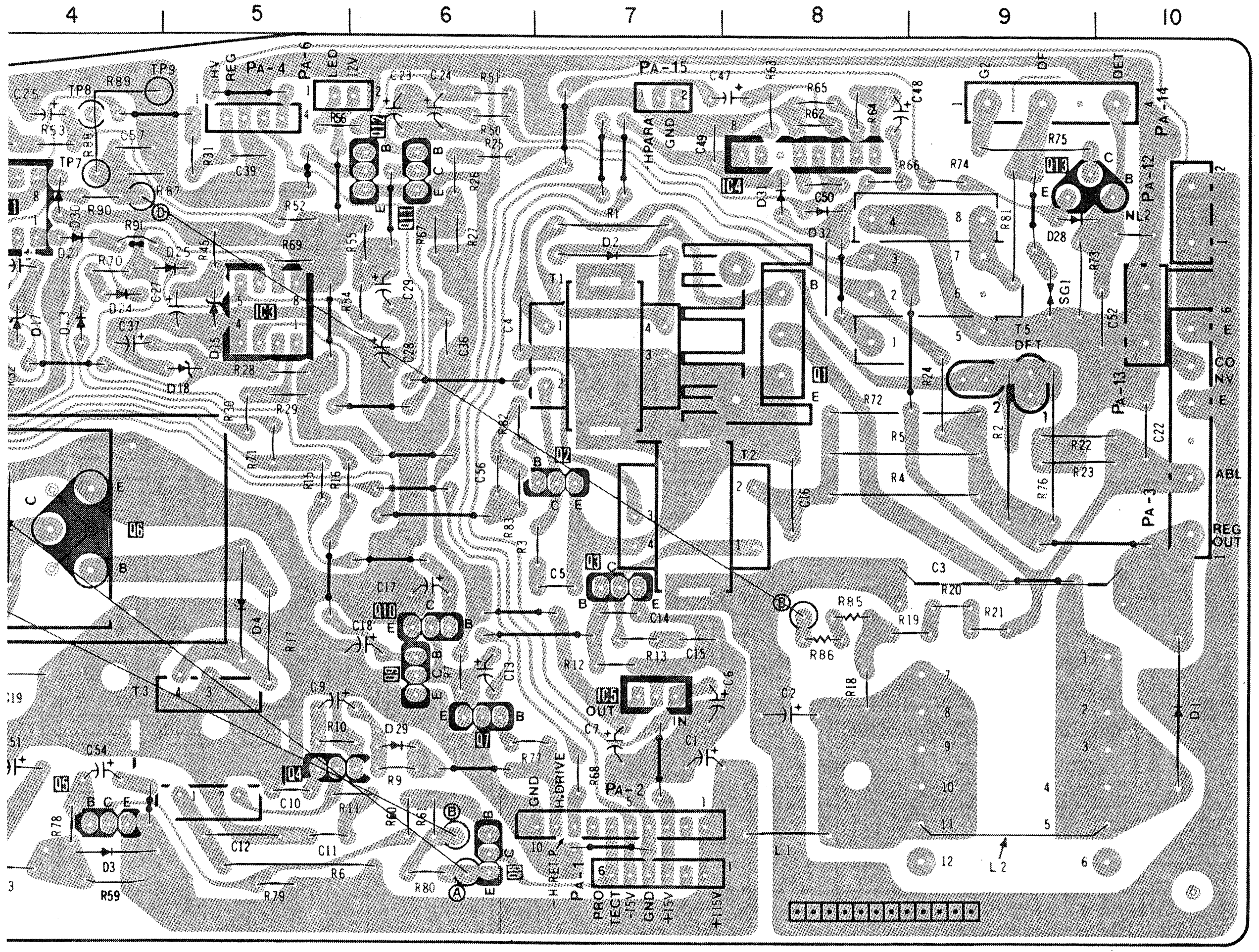
– ED BOARD –

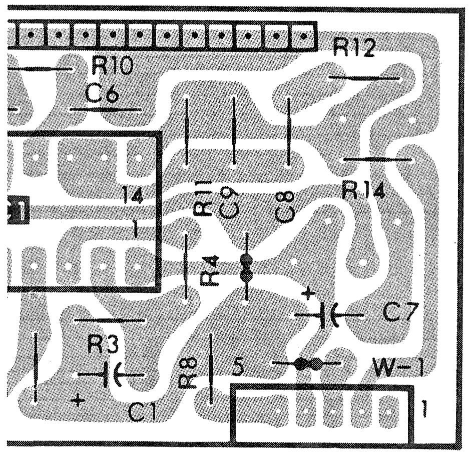

1-622-694-21
ED
SONY

– PB BOARD –

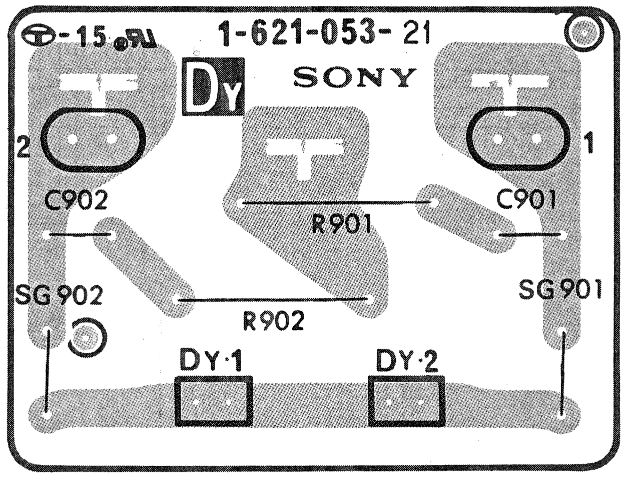

1-621-054-12
PB
SONY

PA [HV REG] PB [HV CONTROL] DY [HV COMBINATION]


4
5
6
7
8
9
10
PA-4
PA-6
PA-15
PA-14
PA-12
PA-13
PA-3
PA-2
PA-1
IC3
IC4
IC5
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
T1
T2
T3
T5
L1
L2
TP7
TP8
TP9
DFT
SG1
ABL
REG OUT
HPARA
GND
H.DRIVE
PRO TECT
-15V
+15V
+115V
OUT
IN


R10
C6
R12
R11
C9
C8
R14
R4
C7
R3
R8
W-1
C1
14
1
5

– DY BOARD –

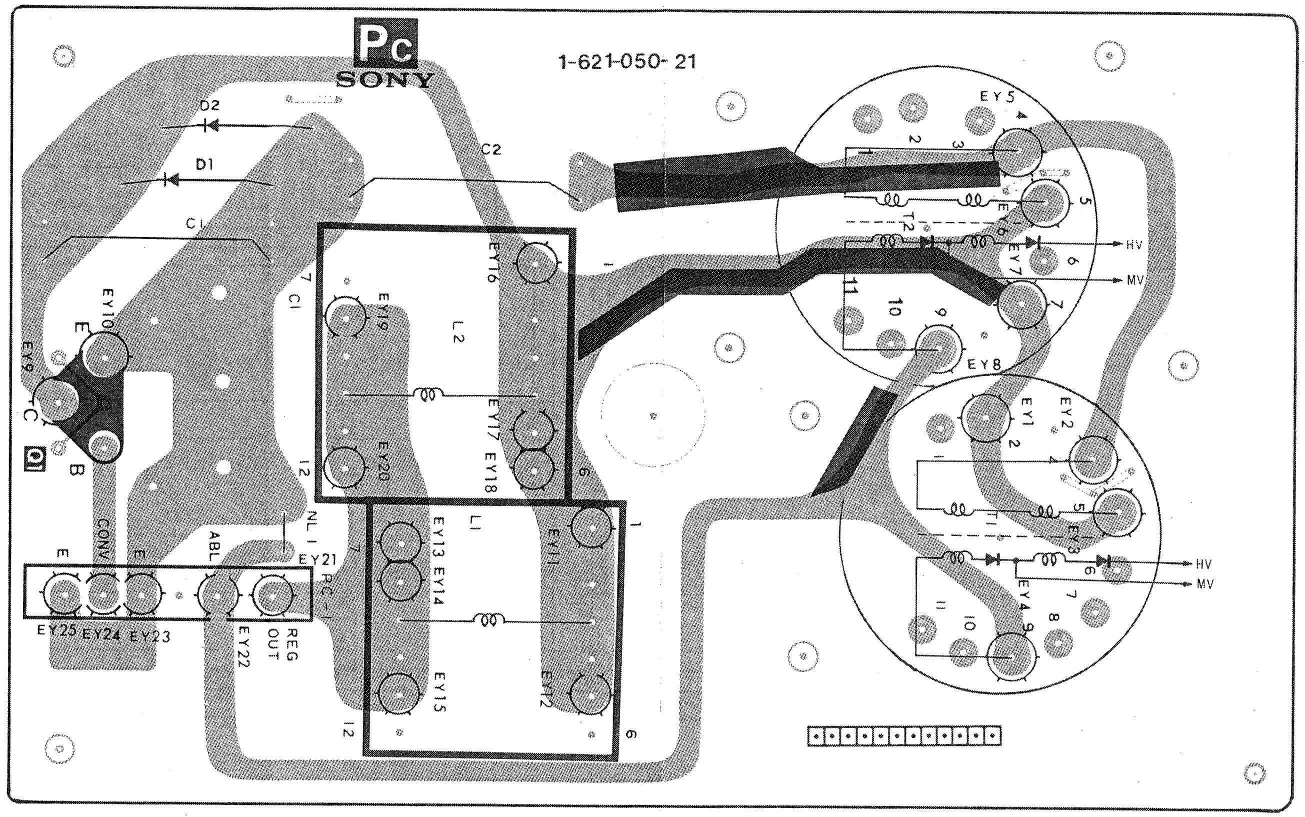

-15
1-621-053- 21
Dy
SONY
2
1
C902
C901
R901
R902
SG902
SG901
DY-1
DY-2

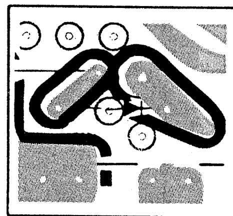
PA BOARD

IC	
IC1	A-4
IC2	B-2
IC3	B-5
IC4	A-8
IC5	D-7
TRANSISTOR	
Q1	B-8
Q2	C-7
Q3	C-7
Q4	E-5
Q5	E-4
Q6	C-4
Q7	D-6
Q8	E-6
Q9	D-6
Q10	D-6
Q11	A-6
Q12	A-6
Q13	A-10
Q14	B-2
DIODE	
D1	D-10
D2	B-7
D3	E-4
D4	D-5
D7	D-2
D8	C-3
D9	C-3
D10	C-2
D11	C-2
D12	C-2
D13	B-2
D14	C-4
D15	B-5
D16	B-2
D17	B-4
D18	B-5
D20	A-3
D21	B-4
D22	B-3
D23	B-4
D24	B-4
D25	B-5
D26	B-3
D28	B-9
D29	D-6
D30	A-4
D31	A-8
D32	A-8
D33	A-3
TP	
TP1	A-1
TP2	A-2
TP3	A-2
TP4	A-3
TP5	A-3
TP6	A-3
TP7	A-4
TP8	A-4
TP9	A-5

PC [FBT, HV CONV.] HA [CUSTOMER CONTRO

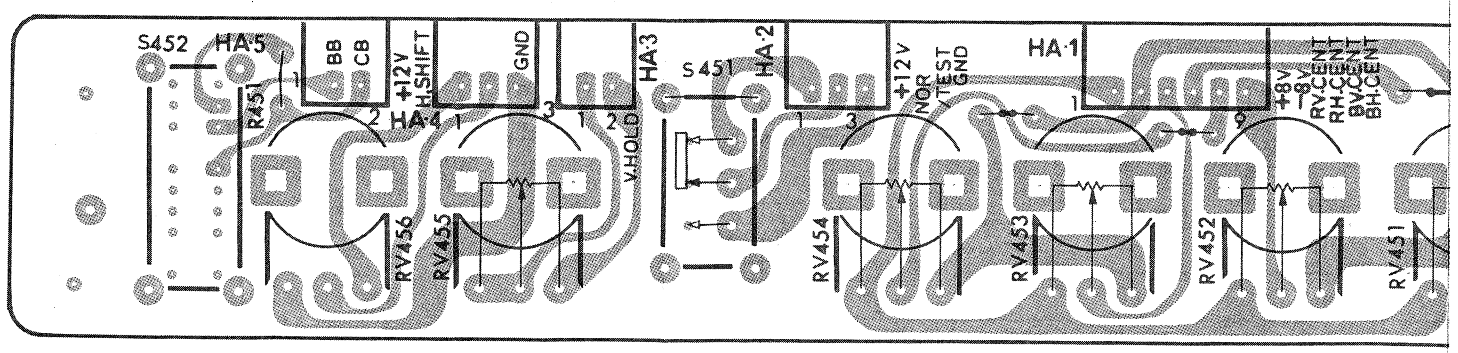
– PC BOARD –


Pc
SONY
1-621-050- 21
D1
D2
C1
C2
L1
L2
EY1
EY2
EY3
EY4
EY5
EY6
EY7
EY8
EY9
EY10
EY11
EY12
EY13
EY14
EY15
EY16
EY17
EY18
EY19
EY20
EY21
EY22
EY23
EY24
EY25
HV
MV
E
C
B
Q1
CONV
ABL
REG OUT
NL
PC-1



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

– HA BOARD –

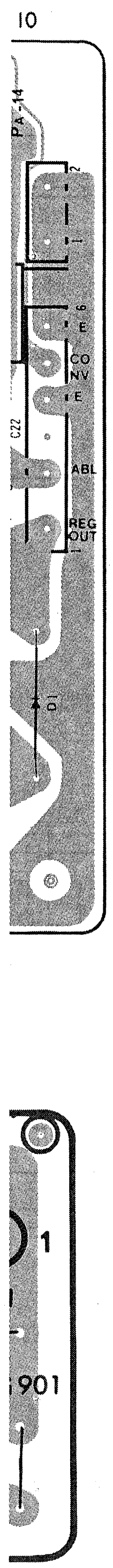

S452
HA-5
R451
BB
CB
+12V
H.SHIFT
HA-4
GND
HA-3
V.HOLD
S451
HA-2
+12V
NOR
TEST
GND
HA-1
+8V
-8V
RV.CENT
RH.CENT
BV.CENT
BH.CENT
RV456
RV455
RV454
RV453
RV452
RV451

l]

PC [FBT, HV CONV.] **HA** [CUSTOMER CONTROL] **X** [LAMP] **Y** [POWER IND]

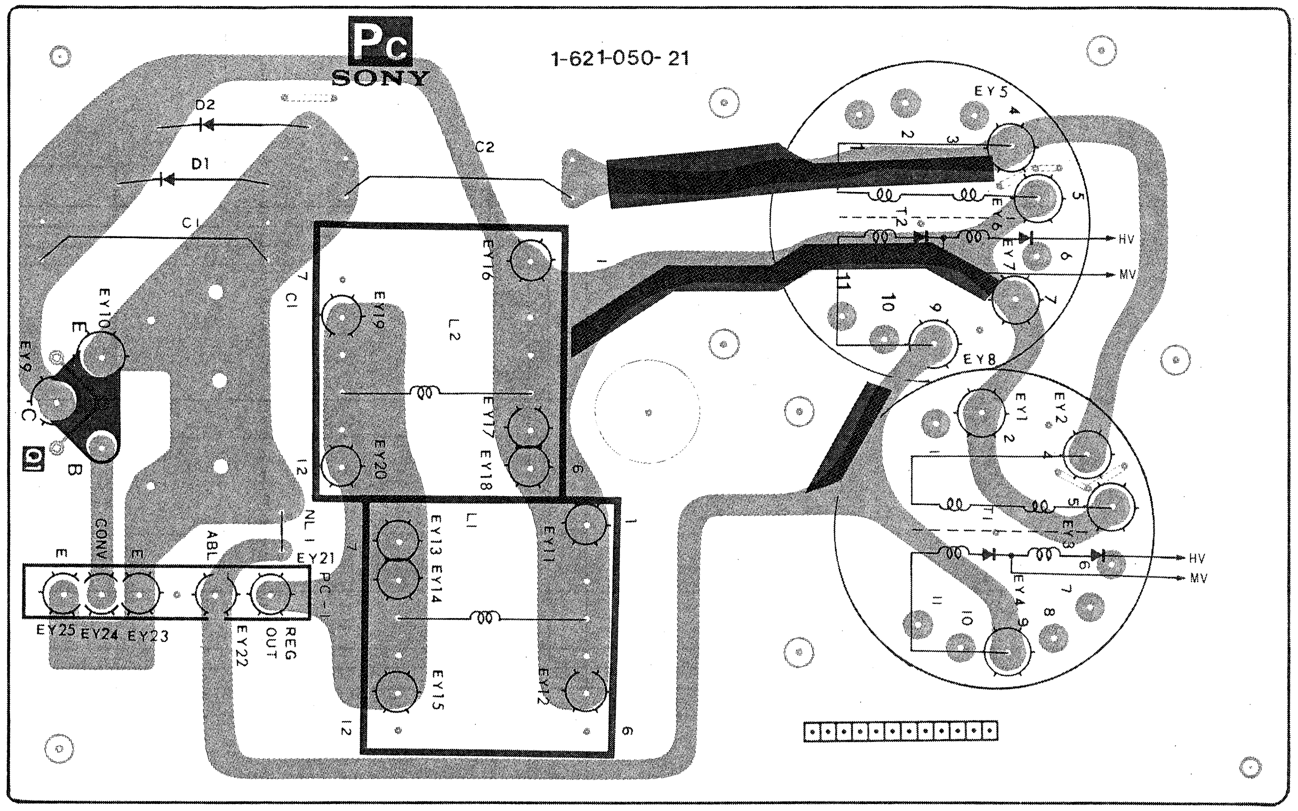
PA BOARD

IC	
IC1	A-4
IC2	B-2
IC3	B-5
IC4	A-8
IC5	D-7
TRANSISTOR	
Q1	B-8
Q2	C-7
Q3	C-7
Q4	E-5
Q5	E-4
Q6	C-4
Q7	D-6
Q8	E-6
Q9	D-6
Q10	D-6
Q11	A-6
Q12	A-6
Q13	A-10
Q14	B-2
DIODE	
D1	D-10
D2	B-7
D3	E-4
D4	D-5
D7	D-2
D8	C-3
D9	C-3
D10	C-2
D11	C-2
D12	C-2
D13	B-2
D14	C-4
D15	B-5
D16	B-2
D17	B-4
D18	B-5
D20	A-3
D21	B-4
D22	B-3
D23	B-4
D24	B-4
D25	B-5
D26	B-3
D28	B-9
D29	D-6
D30	A-4
D31	A-8
D32	A-8
D33	A-3
TP	
TP1	A-1
TP2	A-2
TP3	A-2
TP4	A-3
TP5	A-3
TP6	A-3
TP7	A-4
TP8	A-4
TP9	A-5



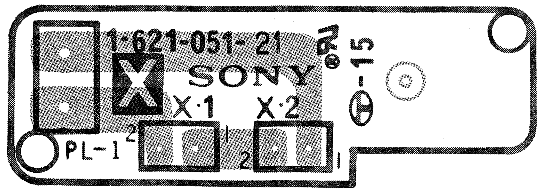
10
PA-14
CO
NV
ABL
REG
OUT
C22
D1
1
901

– PC BOARD –



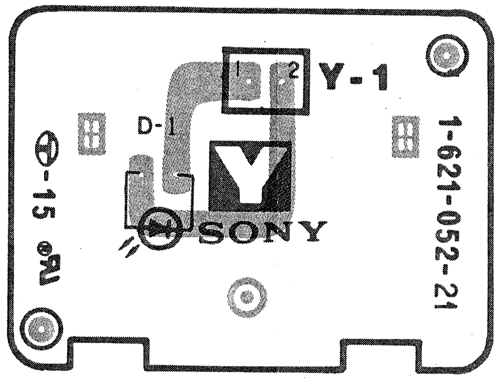
Pc
SONY
1-621-050-21
D2
D1
C2
C1
L2
L1
T1
T2
EY1
EY2
EY3
EY4
EY5
EY6
EY7
EY8
EY9
EY10
EY11
EY12
EY13
EY14
EY15
EY16
EY17
EY18
EY19
EY20
EY21
EY22
EY23
EY24
EY25
E
C
B
CONV
ABL
REG OUT
NL 1
PC-1
HV
MV

– X BOARD –

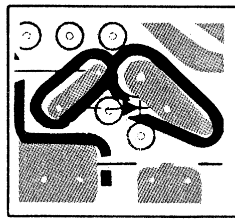


1-621-051-21
X
SONY
PL-1
X·1
X·2
-15

– Y BOARD –

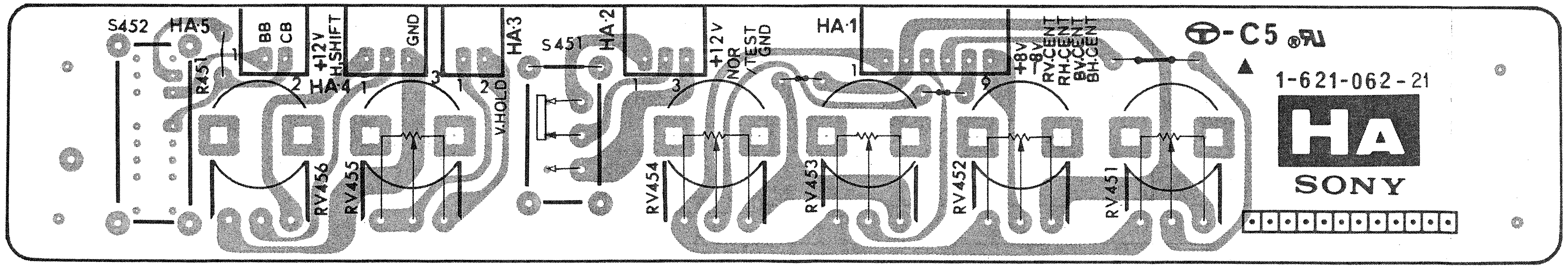


Y-1
D-1
Y
SONY
-15
1-621-052-21

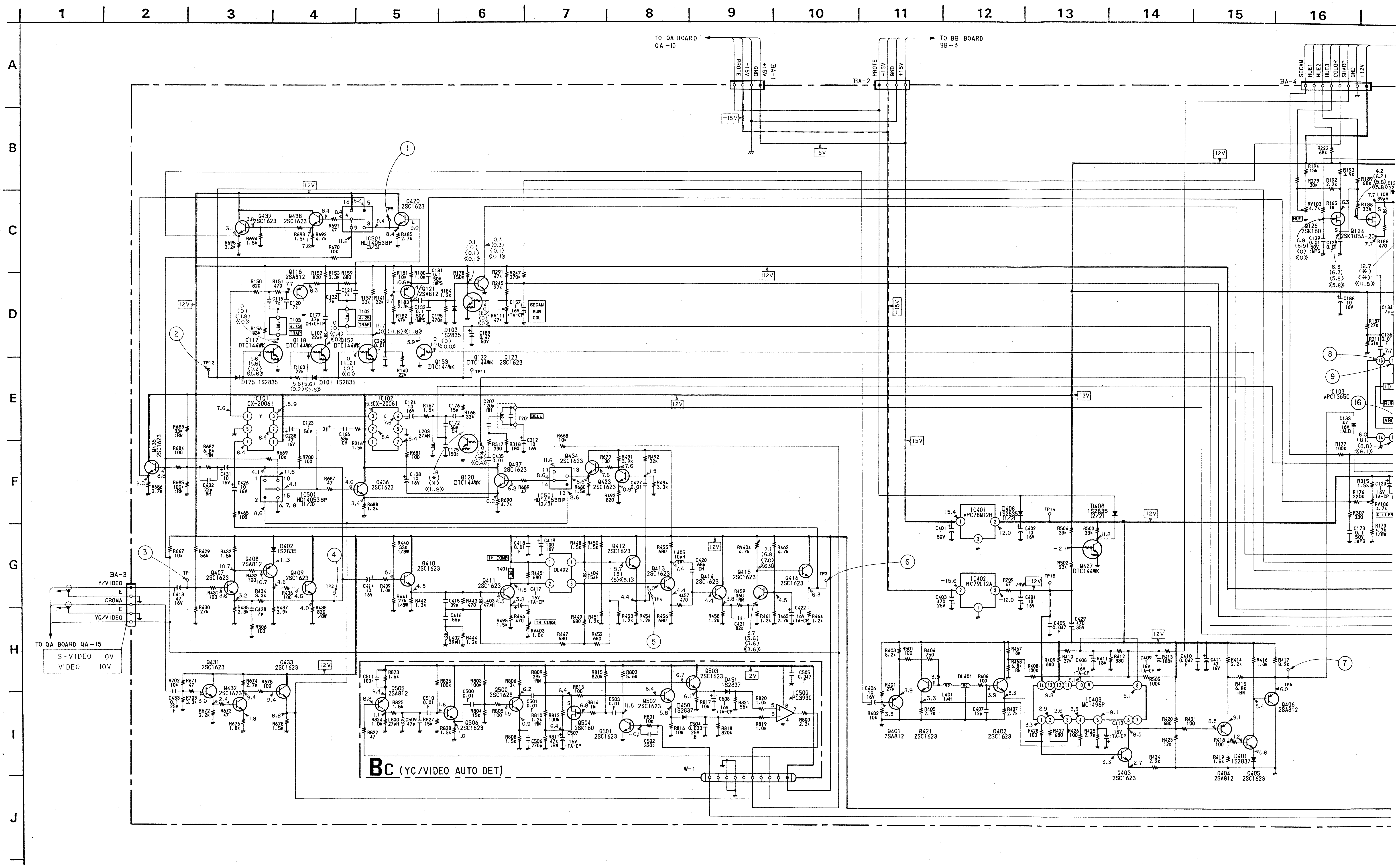


NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

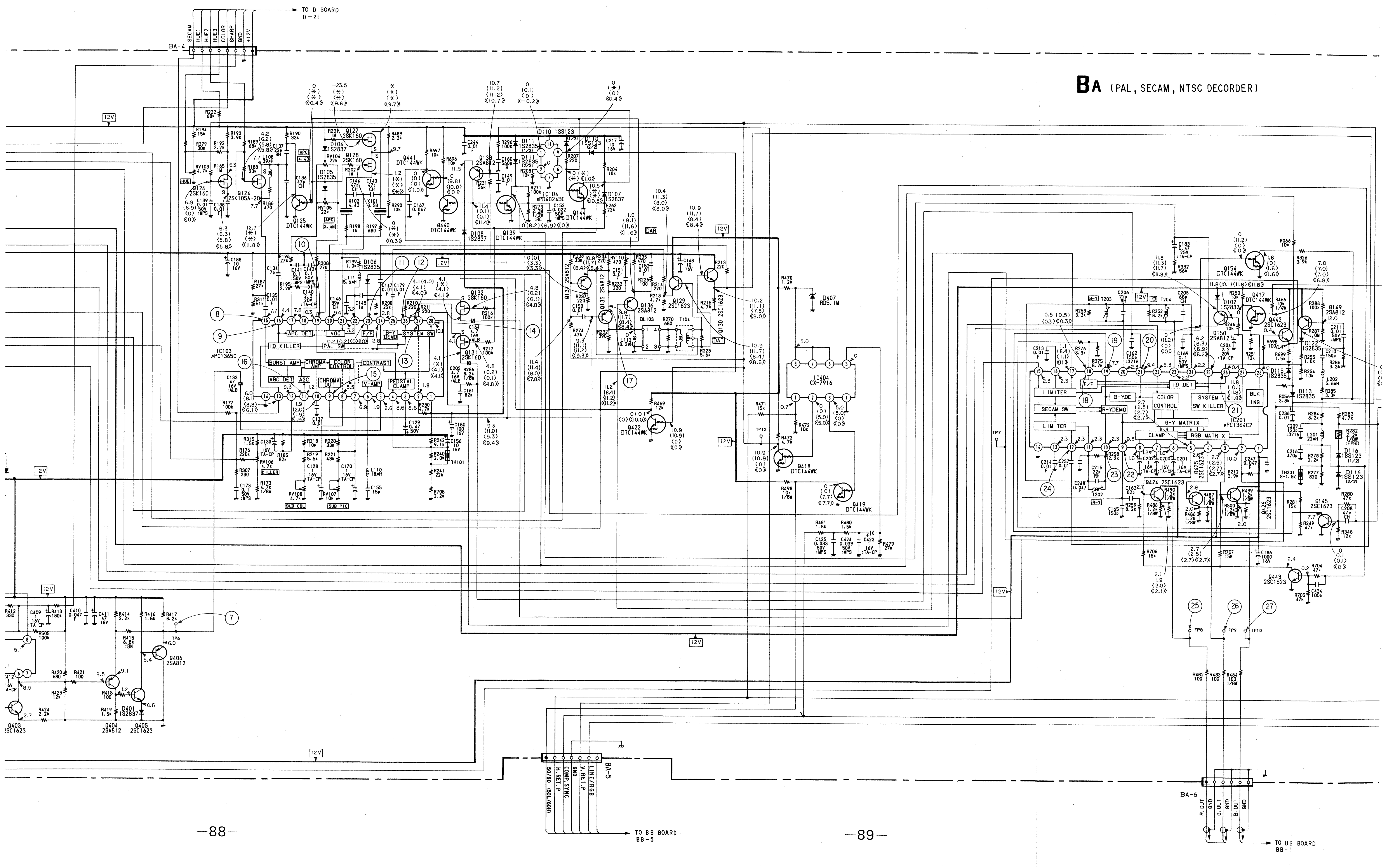
– HA BOARD –

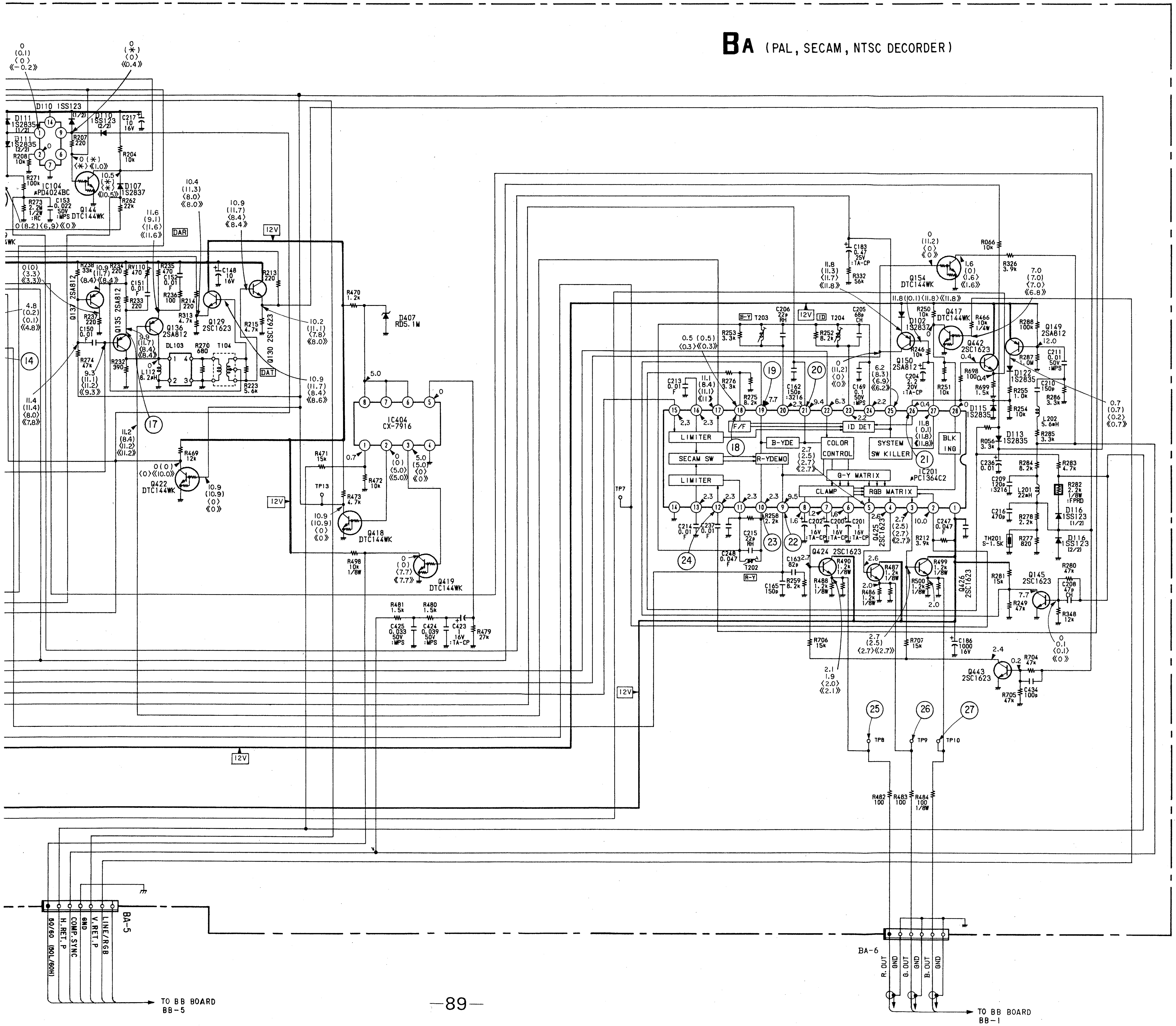


S452
HA-5
R451
BB
CB
+12V
H.SHIFT
HA-4
GND
HA-3
V.HOLD
S451
HA-2
+12V
NOR
TEST
GND
HA-1
+8V
-8V
RV.CENT
RH.CENT
BV.CENT
BH.CENT
RV456
RV455
RV454
RV453
RV452
RV451
-C5
1-621-062-21
HA
SONY


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
TO QA BOARD QA-10
TO BB BOARD BB-3
PROTE -15V GND +15V
BA-1
BA-2
BA-4
SECAM HUE1 HUE2 HUE3 COLOR SHARP GND +12V
-15V
15V
12V
Q439 2SC1623
Q438 2SC1623
IC501 HD14053BP (3/3)
Q420 2SC1623
TP5
Q116 2SA812
Q117 DTC144WK
Q118 DTC144WK
Q152 DTC144WK
Q153 DTC144WK
Q121 2SA812
Q122 DTC144WK
Q123 2SC1623
T103 4.43 TRAP
T102 4.25 TRAP
D103 1S2835
D125 1S2835
D101 1S2835
SECAM SUB COL
TP12
TP11
IC101 CX-20061
IC102 CX-20061
Q435 2SC1623
T201 BELL
Q120 DTC144WK
Q436 2SC1623
Q437 2SC1623
IC501 HD14053BP (1/3)
IC501 HD14053BP (2/3)
Q434 2SC1623
Q423 2SC1623
BA-3
Y/VIDEO
E
CROMA
E
YC/VIDEO
TO QA BOARD QA-15
S-VIDEO 0V
VIDEO 10V
TP1
TP2
Q407 2SC1623
Q408 2SA812
Q409 2SC1623
D402 1S2835
Q410 2SC1623
Q411 2SC1623
1H COMB
DL402
Q412 2SC1623
Q413 2SC1623
Q414 2SC1623
Q415 2SC1623
Q416 2SC1623
TP3
TP4
Q431 2SC1623
Q432 2SC1623
Q433 2SC1623
Bc (YC/VIDEO AUTO DET)
Q505 2SA812
Q506 2SC1623
Q500 2SC1623
Q504 2SK160
Q501 2SC1623
Q502 2SC1623
Q503 2SC1623
D450 1S2837
D451 1S2837
IC500 μPC393C
W-1
IC401 μPC78M12H
IC402 RC79L12A
D408 1S2835 (1/2)
D408 1S2835 (2/2)
TP14
TP15
Q427 DTC144WK
-12V
Q401 2SA812
Q421 2SC1623
DL401
Q402 2SC1623
IC403 MC1496P
Q403 2SC1623
Q404 2SA812
Q405 2SC1623
Q406 2SA812
D401 1S2837
TP6
HUE
Q126 2SK160
Q124 2SK105A-20
IC103 μPC1365C
KILLER
BUR
AGC
ID
1 2 3 4 5 6 7 8 9 16

BA (PAL, SECAM, NTSC DECORDER)


TO D BOARD
D-21
BA-4
SECAM
HUE1
HUE2
HUE3
COLOR
SHARP
GND
+12V
12V
IC103
μPC1365C
ID KILLER
APC DET
VDC
PAL SW
F/F
B-Y DEMO
SYSTEM SW
BURST AMP
CHROMA AMP
COLOR CONTROL
CONTRAST
AGC DET
AGC
CHROMA OUT
V-AMP
PEDSTAL CLAMP
IC104
μPD4024BC
D110 1SS123
SUB COL
SUB PIC
KILLER
HUE
APC
DAR
DAT
DL103
T104
IC404
CX-7916
D407
RD5.1M
TP13
TP7
IC201
μPC1364C2
LIMITER
SECAM SW
B-YDE
R-YDEMO
COLOR CONTROL
SYSTEM SW KILLER
ID DET
BLK ING
G-Y MATRIX
CLAMP
RGB MATRIX
B-Y T203
R-Y T202
TP8
TP9
TP10
BA-5
50/60 (50L/60H)
H.RET.P
COMP.SYNC
GND
V.RET.P
LINE/RGB
TO BB BOARD
BB-5
BA-6
R.OUT
GND
G.OUT
GND
B.OUT
GND
TO BB BOARD
BB-1


BA (PAL, SECAM, NTSC DECORDER)
IC104 μPD4024BC
IC404 CX-7916
IC201 μPC1364C2
LIMITER
SECAM SW
B-YDE
R-YDEMO
COLOR CONTROL
SYSTEM SW KILLER
ID DET
BLK ING
G-Y MATRIX
CLAMP
RGB MATRIX
F/F
12V
DAR
DAT
TP7
TP8
TP9
TP10
TP13
BA-5
50/60 (50L/60H)
H.RET.P
COMP.SYNC
GND
V.RET.P
LINE/RGB
TO BB BOARD BB-5
BA-6
R.OUT
GND
G.OUT
GND
B.OUT
GND
TO BB BOARD BB-1

BA	IC101	CX-20061	NT PAL SW1	Q412	2SC1623	CHROMA BUFF
	102	CX-20061	NT PAL SW2	413	2SC1623	COMB Y AMP-1
	103	μPC1365C	NT PAL DEM	414	2SC1623	COMB Y AMP-2
	104	μPD4024BC	COL MODE SEL	415	2SC1623	COMB Y AMP-3
	201	μPC1364C2	SECAM DEM	416	2SC1623	COMB Y BUFF
	401	μPC78M12H	+12V REG	417	DTC144WK	BLK SW
	402	RC79L12A	−12V REG	418	DTC144WK	50/60 INV
	403	MC1496P	APT CTL	419	DTC144WK	60/50 INV
	404	CX-7916	50/60 CTL	420	2SC1623	Y BUFF-1
	501	HD14053BP	S/W SW	421	2SC1623	APT DRIVE-1
				422	DTC144WK	B/W SW
	Q116	2SA812	Y-AMP-5	423	2SC1623	CHROMA SW
	117	DTC144WK	TRAP SW-1	424	2SC1623	R BUFF
	118	DTC144WK	PAL SW-1	425	2SC1623	G BUFF
	120	DTC144WK	CHROMA SW	426	2SC1623	B BUFF
	121	2SA812	ID AMP	427	DTC144WK	PROTECTOR
	122	DTC144WK	ID SW-1	431	2SC1623	CROMA BUFF-1
	123	2SC1623	ID SW-2	432	2SC1623	CROMA AMP
	124	2SK105-20	HUE CONT	433	2SC1623	CROMA BUFF-2
	125	DTC144WK	PHASE SW-2	434	2SC1623	NT C BUFF
	126	2SK160	PHASE CONT-1	435	2SC1623	NT Y AMP
	127	2SK160	OSC SW-1	436	2SC1623	SECAM C BUFF
	128	2SK160	OSC SW-2	437	2SC1623	NT C BUFF
	129	2SC1623	DAT BUFF-1	438	2SC1623	Y-BUFF-2
	130	2SC1623	DAT BUFF-2	439	2SC1623	Y-BUFF-3
	131	2SK160	B-Y SW	440	DTC144WK	W/B SW-1
	132	2SK160	R-Y SW	441	DTC144WK	W/B SW-2
	135	2SA812	PAL AMP	442	2SC1623	BPT BUFF
	136	2SA812	SECAM AMP	443	2SC1623	CUT OFF ADJ
	137	2SA812	NTSC SW			
	138	2SA812	COL SW	D101	1S2835	SW-2
	139	DTC144WK	SYSTEM SW-2	102	1S2837	LEVEL SHIFT-1
	144	DTC144WK	SYSTEM SW-1	103	1S2835	SLICE
	145	2SC1623	INV-1	104	1S2837	APC SW-1
	149	2SA812	INV-2	105	1S2835	APC SW-2
	150	2SA812	SECAM SW-1	106	1S2835	PROT-3
	152	DTC144WK	TRAP SW-2	107	1S2837	TRAP SW-2
	153	DTC144WK	TRAP SW-3	108	1S2837	LEVEL SHIFT-2
	154	DTC144WK	SECAM SW-2	110	1SS123	PROT-1
	401	2SA812	Y BUFF-4	111	1S2835	SYSTEM SW
	402	2SC1623	APT DRIVE-1	113	1S2835	SW-1
	403	2SC1623	Y AMP-1	115	1S2835	GGATE-1
	404	2SA812	Y AMP-2	116	1SS123	GATE-3/CL
	405	2SC1623	Y AMP-3	122	1S2835	GATE-2
	406	2SA812	Y AMP-4	125	1S2835	TRAP SW-1
	407	2SC1623	VIDEO AMP-1	401	1S2837	LEVEL SHIFT-3
	408	2SA812	VIDEO AMP-2	402	1S2835	LEVEL SHIFT-4
	409	2SC1623	VIDEO BUFF	407	RD5.1M	50/60 VCC
	410	2SC1623	COMB BUFF	408	1S2835	PROTE
	411	2SC1623	COMB AMP			

BC	IC500	μPC393C	S/V SW
	Q500	2SC1623	C AMP-1
	501	2SC1623	BGP SW-1
	502	2SC1623	PEAK HOLD-1
	503	2SC1623	PEAK HOLD-2
	504	2SC1623	BGP SW-2
	505	2SA812	C AMP-2
	506	2SC1623	C BUFF
	D450	1S2837	PEAK HOLD-1
	451	1S2837	PEAK HOLD-2

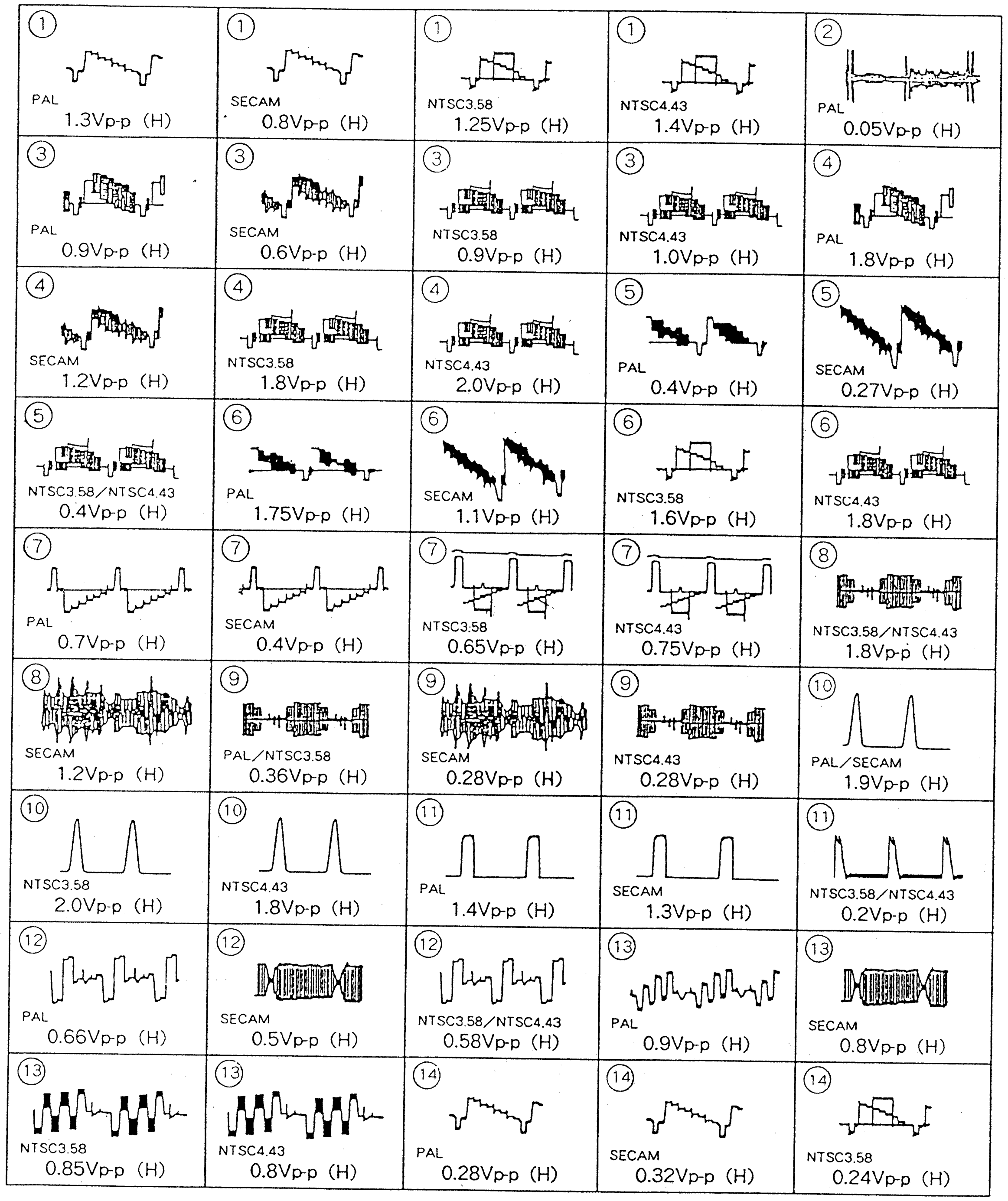
IC101, 102

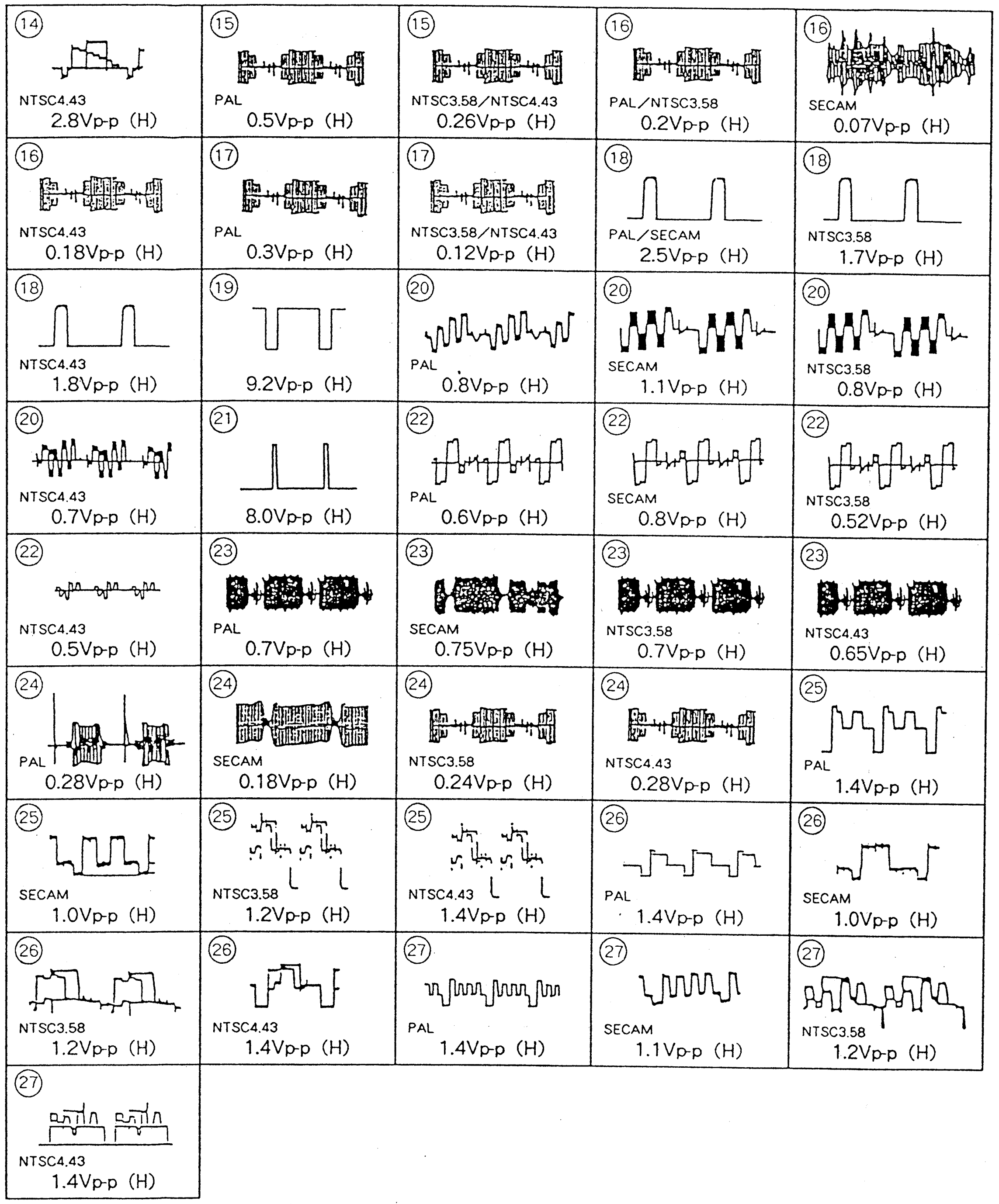
INPUT SIGNAL	CONTROL ③	SW ON
PAL SECAM NTSC 4.43 NTSC 3.58 mono-chrome	H	②-④
NTSC 3.58 color	L	⑦-④

IC501

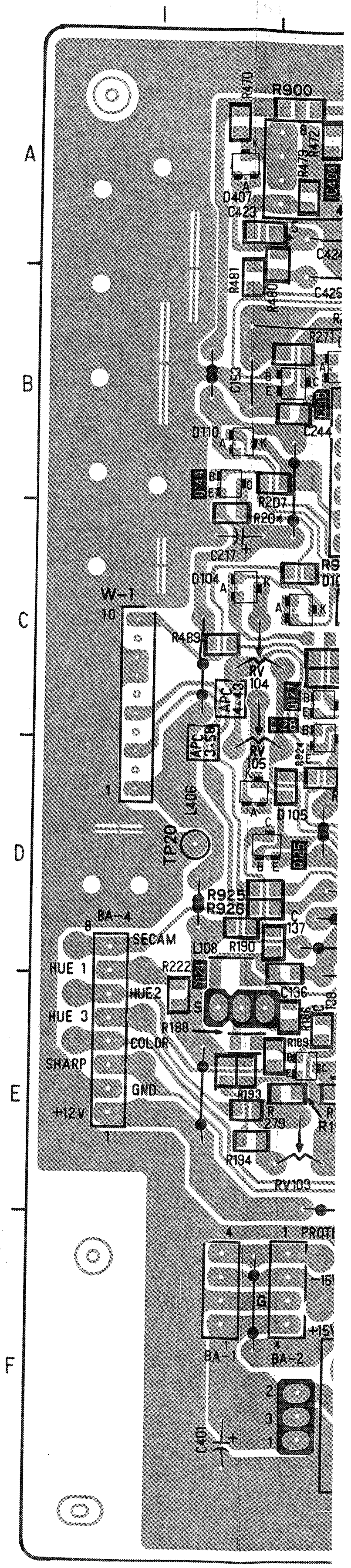
INPUT SIGNAL	CONTROL			SW ON		
	⑨	⑩	⑪			
VIDEO IN	H	H	H	③-④	①-⑮	⑬-⑭
S-VIDEO IN	L	L	L	⑤-④	②-⑮	⑫-⑭

BA BOARD



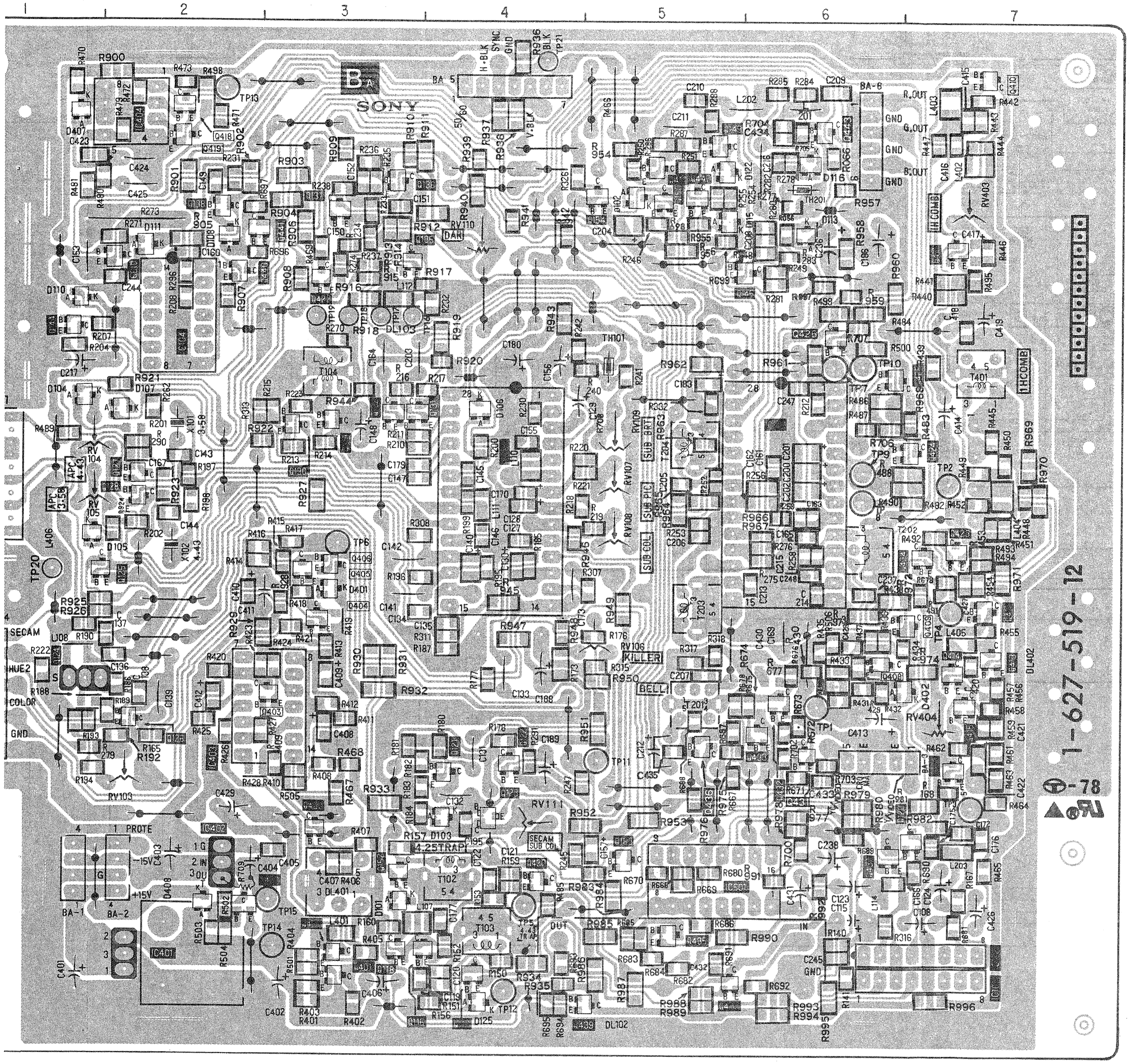


- BA BOARD -


A
B
C
D
E
F
R900
R470
D407
C423
R481
R480
C424
C425
R271
C152
D110
C244
R207
R204
C217
D104
W-1
R489
RV 104
APC 4.43
APC 3.58
RV 105
L406
TP20
D105
R925
R926
BA-4
SECAM
L108
R190
HUE 1
R222
HUE2
HUE 3
C136
R188
COLOR
SHARP
GND
+12V
R193
R194
RV103
PROT
BA-1
BA-2
C401

BA

[PAL. SECAM. NTSC DECORDER]


1
2
3
4
5
6
7
SONY
BA
1-627-519-12
-78
SECAM
HUE2
COLOR
GND
PROTE
BA-1
BA-2
BA-6
R.OUT
G.OUT
B.OUT
GND
H.BLK
SYNC
V.BLK
SUB BRT
SUB PIC
SUB COL
KILLER
BELL
4.25TRAP
SECAM SUB COL
APC 4.43
APC 3.58
H COMB
DAH

BA BOARD

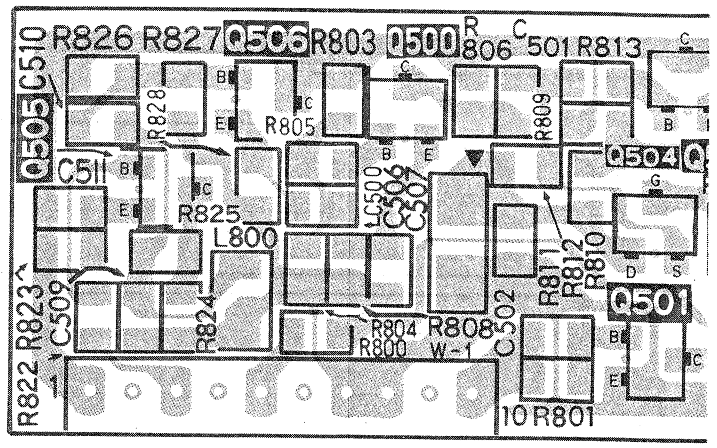
IC	
IC101	F-7
IC102	F-7
IC103	C-4
IC104	B-2
IC201	C-6
IC401	F-2
IC402	F-2
IC403	E-2
IC404	A-2
IC501	F-5

TRANSISTOR	
Q116	F-4
Q117	F-4
Q118	F-3
Q120	F-7
Q121	E-4
Q122	E-4
Q123	E-4
Q124	E-1
Q125	D-1
Q126	E-2
Q127	C-2
Q128	C-2
Q129	C-3
Q130	C-3
Q131	C-3
Q132	C-3
Q135	B-3
Q136	B-3
Q137	B-3
Q138	B-2
Q139	B-2
Q144	B-1
Q145	B-6
Q149	A-5
Q150	B-5
Q152	F-3
Q153	F-5
Q154	B-5
Q401	F-3
Q402	F-3
Q403	E-3
Q404	D-3
Q405	D-3
Q406	D-3
Q407	E-6
Q408	E-6
Q409	D-7
Q410	A-7
Q411	B-7
Q412	D-7
Q413	E-7
Q414	E-7
Q415	E-7
Q416	E-7
Q417	B-5
Q418	A-2
Q419	A-2
Q420	F-4
Q421	F-3
Q422	B-3
Q423	D-7
Q424	C-7
Q425	C-6
Q426	B-6
Q427	F-2
Q431	E-6
Q432	E-6
Q433	E-6
Q434	D-7
Q435	F-5
Q436	E-5
Q437	F-6
Q438	F-5
Q439	F-4
Q440	B-2
Q441	B-2
Q442	B-5
Q443	A-6

DIODE	
D101	F-3
D102	B-5
D103	E-4
D104	C-1
D105	D-1
D106	C-4
D107	C-2
D108	B-2
D110	B-1
D111	B-2
D113	B-6
D115	B-5
D116	A-6
D122	A-5
D125	F-4
D401	D-3
D402	E-7
D407	A-1
D408	F-2

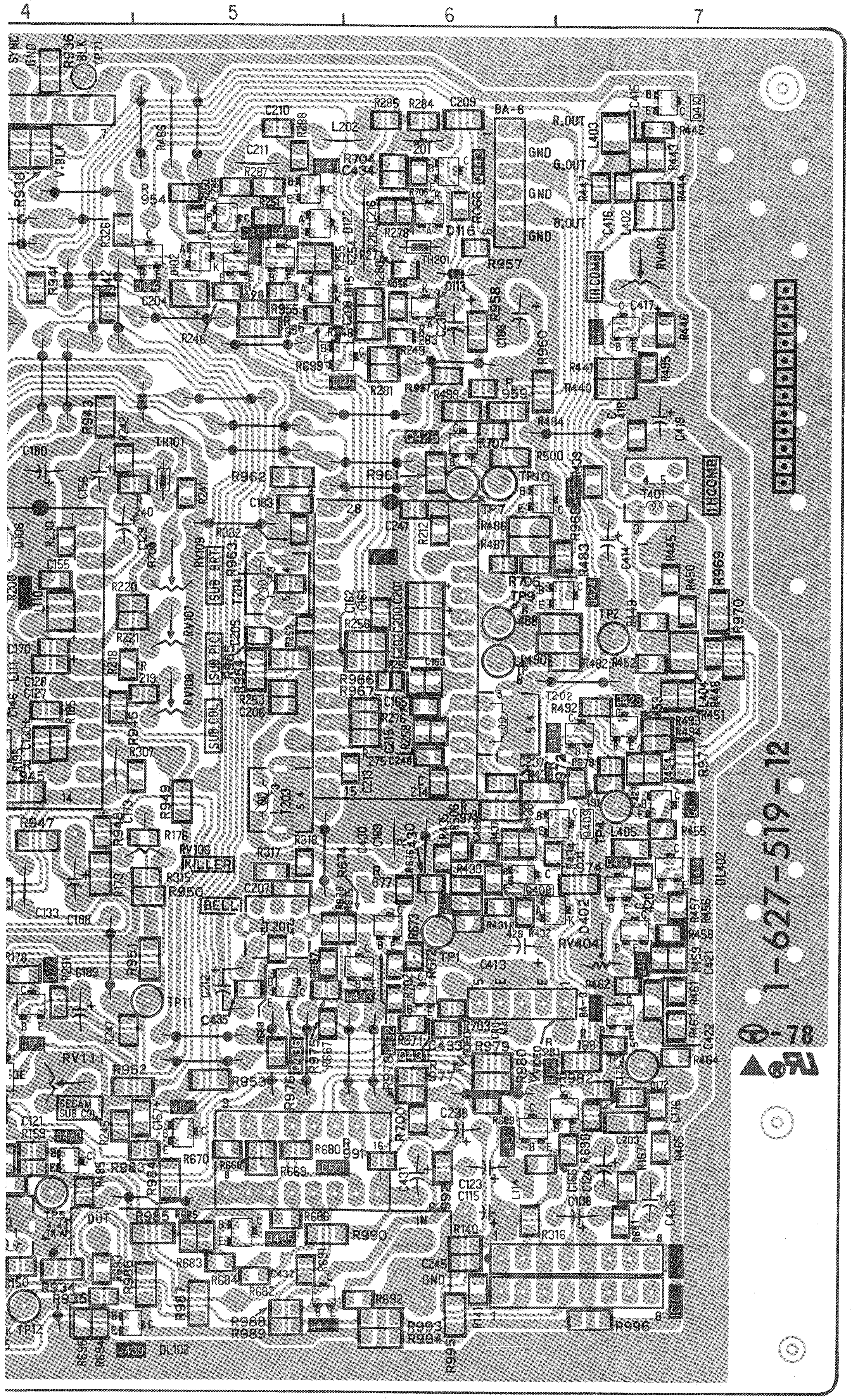
VARIABLE RESISTOR	
RV103	E-2
RV104	C-1
RV105	D-1
RV106	D-5
RV107	C-5
RV108	D-5
RV110	B-4
RV111	F-4
RV403	B-7
RV404	E-7

– BC BOARD –


R826
R827
Q506
R803
Q500
C806
C501
R813
C510
Q505
R828
R805
R809
Q504
C511
R825
L800
C500
C509
C507
R823
C509
R824
R804
R808
R800
W-1
C502
R811
R812
R810
Q501
R822
R801

BA

[PAL. SECAM. NTSC DECORDER]


4
5
6
7
1-627-519-12
-78
KILLER
BELL
SUB BRT
SUB PIC
SUB COL
SECAM SUB COL
TH COMB
R.OUT
G.OUT
B.OUT
GND
TP1
TP2
TP7
TP9
TP10
TP11
TP12
T401
T202
T203
T204
RV106
RV107
RV108
RV111
RV403
RV404

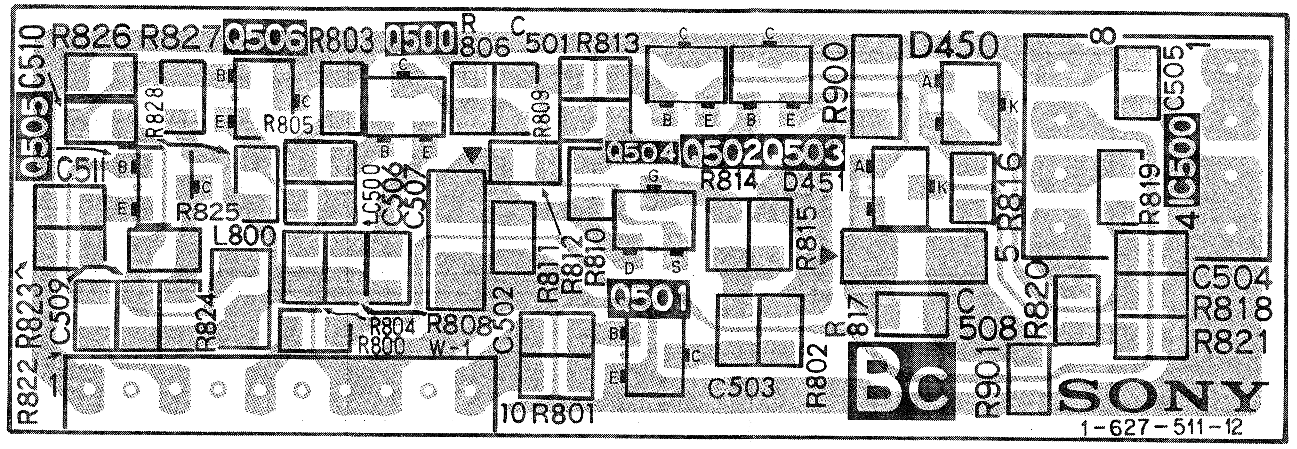
BA BOARD

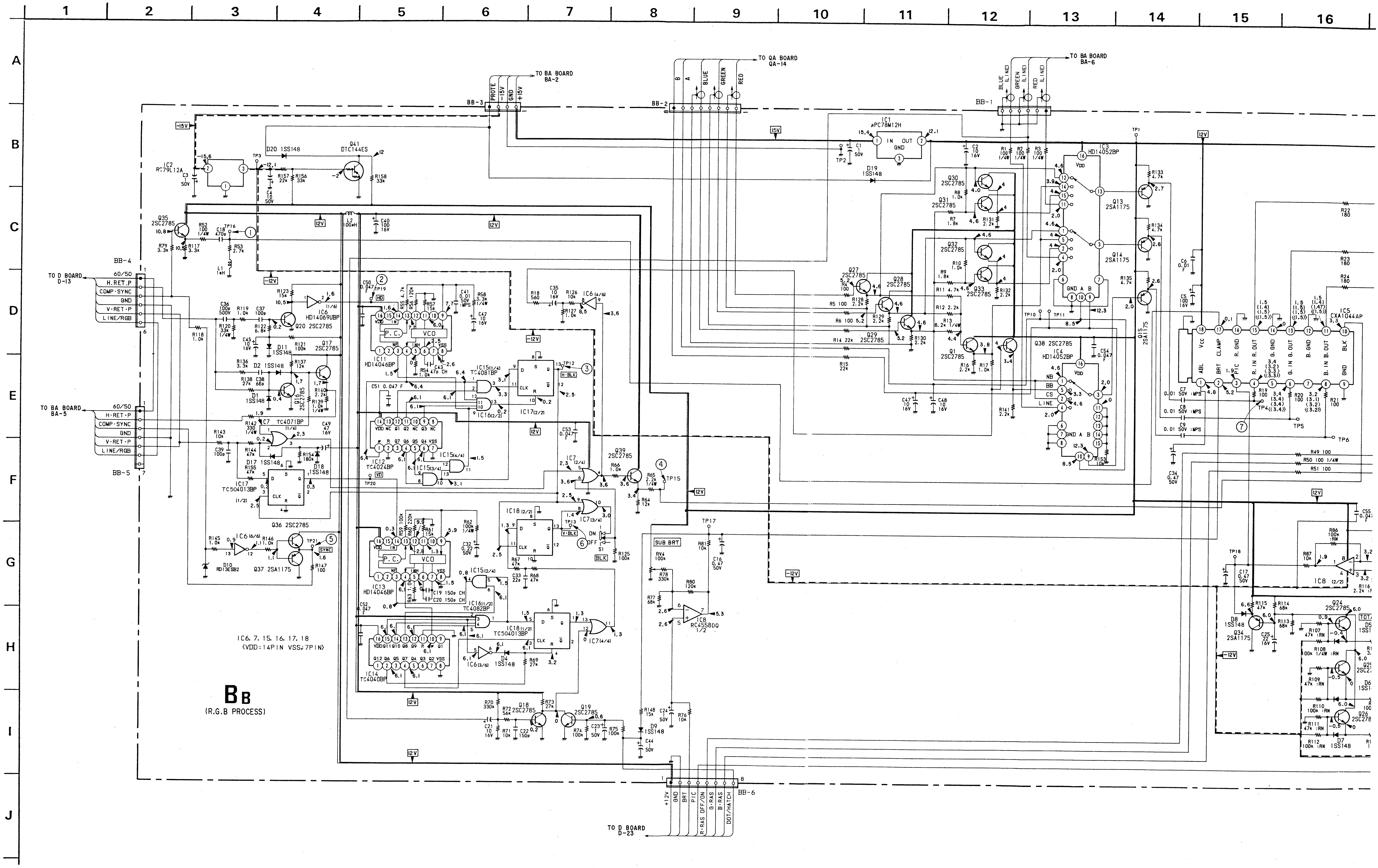
IC	
IC101	F-7
IC102	F-7
IC103	C-4
IC104	B-2
IC201	C-6
IC401	F-2
IC402	F-2
IC403	E-2
IC404	A-2
IC501	F-5
TRANSISTOR	
Q116	F-4
Q117	F-4
Q118	F-3
Q120	F-7
Q121	E-4
Q122	E-4
Q123	E-4
Q124	E-1
Q125	D-1
Q126	E-2
Q127	C-2
Q128	C-2
Q129	C-3
Q130	C-3
Q131	C-3
Q132	C-3
Q135	B-3
Q136	B-3
Q137	B-3
Q138	B-2
Q139	B-2
Q144	B-1
Q145	B-6
Q149	A-5
Q150	B-5
Q152	F-3
Q153	F-5
Q154	B-5
Q401	F-3
Q402	F-3
Q403	E-3
Q404	D-3
Q405	D-3
Q406	D-3
Q407	E-6
Q408	E-6
Q409	D-7
Q410	A-7
Q411	B-7
Q412	D-7
Q413	E-7
Q414	E-7
Q415	E-7
Q416	E-7
Q417	B-5
Q418	A-2
Q419	A-2
Q420	F-4
Q421	F-3
Q422	B-3
Q423	D-7
Q424	C-7
Q425	C-6
Q426	B-6
Q427	F-2
Q431	E-6
Q432	E-6
Q433	E-6
Q434	D-7
Q435	F-5
Q436	E-5
Q437	F-6
Q438	F-5
Q439	F-4
Q440	B-2
Q441	B-2
Q442	B-5
Q443	A-6
DIODE	
D101	F-3
D102	B-5
D103	E-4
D104	C-1
D105	D-1
D106	C-4
D107	C-2
D108	B-2
D110	B-1
D111	B-2
D113	B-6
D115	B-5
D116	A-6
D122	A-5
D125	F-4
D401	D-3
D402	E-7
D407	A-1
D408	F-2
VARIABLE RESISTOR	
RV103	E-2
RV104	C-1
RV105	D-1
RV106	D-5
RV107	C-5
RV108	D-5
RV110	B-4
RV111	F-4
RV403	B-7
RV404	E-7

BC

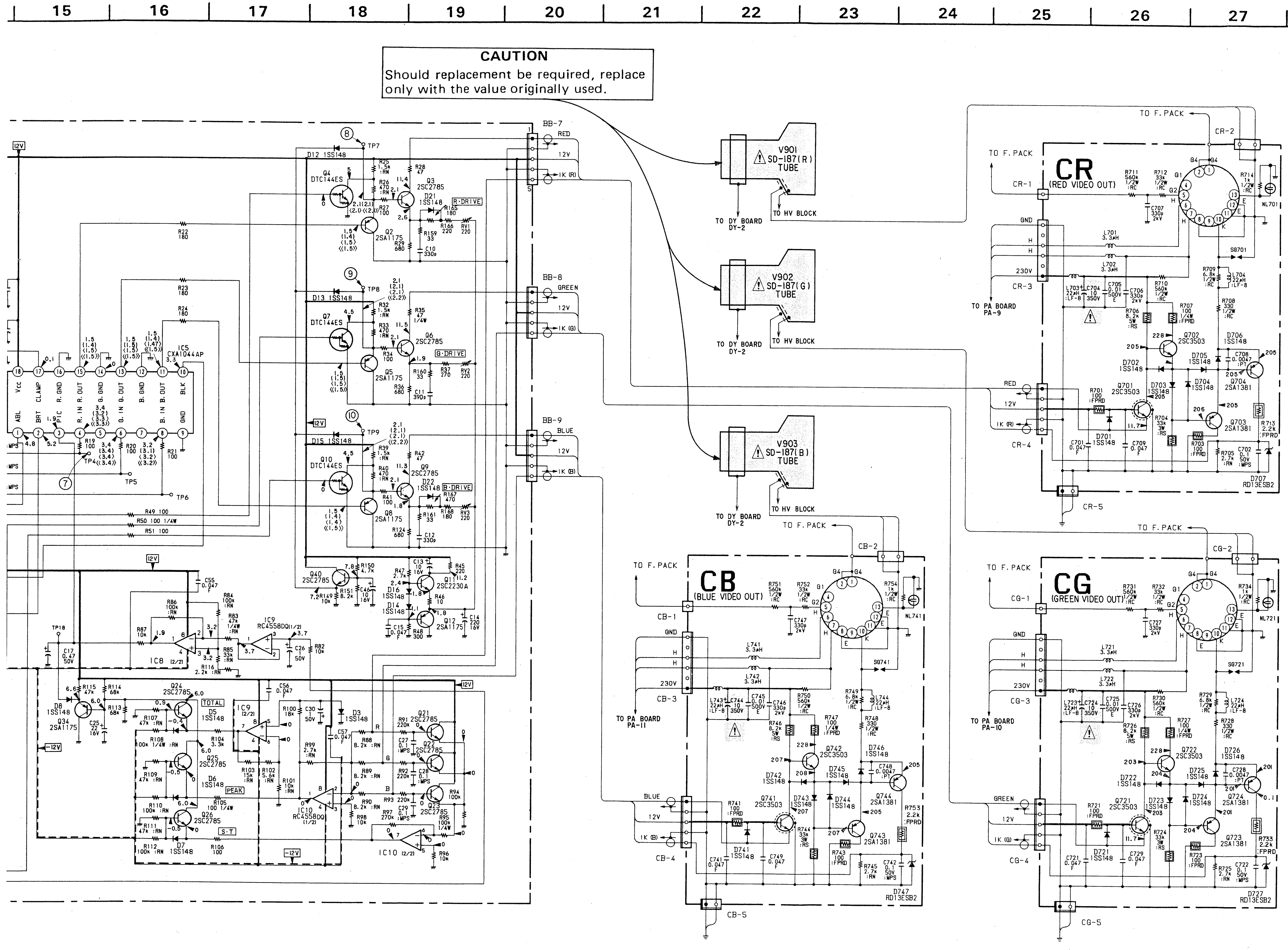
[YC/VIDEO AUTO DET]

– BC BOARD –

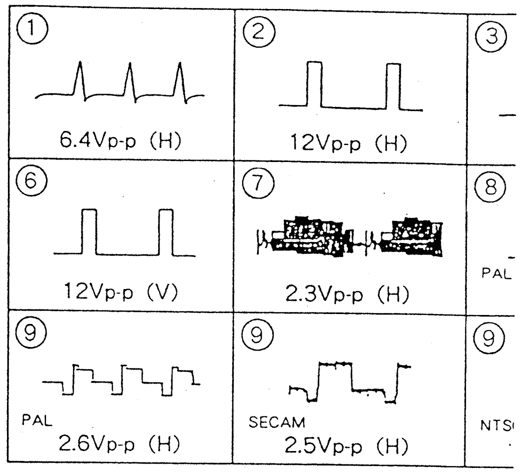

R826
R827
Q506
R803
Q500
R806
C501
R813
D450
R900
C505
Q505
C510
C511
R828
R805
L800
R825
R824
R823
R822
C509
C500
C506
C507
C502
R804
R800
R808
W-1
R811
R812
R810
Q504
Q502
Q503
R814
D451
R815
Q501
R801
C503
R802
R817
C508
R901
R820
R816
R819
C504
R818
R821
Bc
SONY
1-627-511-12


BB
(R.G.B PROCESS)
TO BA BOARD BA-2
TO QA BOARD QA-14
TO BA BOARD BA-6
TO D BOARD D-13
TO BA BOARD BA-5
TO D BOARD D-23
BB-1
BB-2
BB-3
BB-4
BB-5
BB-6
PROTE
-15V
GND
+15V
B
A
BLUE
GREEN
RED
BLUE (LINE)
GREEN (LINE)
RED (LINE)
60/50
H.RET.P
COMP.SYNC
GND
V.RET.P
LINE/RGB
+12V
BRT
PIC
R.RAS OFF/ON
G.RAS
B.RAS
DOT/HATCH
IC1 μPC78M12H
IC2 RC79L12A
IC3 HD14052BP
IC4 HD14052BP
IC5 CXA1044AP
IC6 HD14069UBP
IC7 TC4071BP
IC8 RC4558DQ
IC11 HD14046BP
IC12 TC4024BP
IC13 HD14046BP
IC14 TC4040BP
IC15 TC4081BP
IC16 TC4082BP
IC17 TC4013BP
IC18 TC4013BP
Q41 DTC144ES
Q35 2SC2785
Q20 2SC2785
Q17 2SC2785
Q16 2SC2785
Q36 2SC2785
Q37 2SA1175
Q39 2SC2785
Q18 2SC2785
Q19 2SC2785
Q27 2SC2785
Q28 2SC2785
Q29 2SC2785
Q30 2SC2785
Q31 2SC2785
Q32 2SC2785
Q33 2SC2785
Q1 2SC2785
Q38 2SC2785
Q13 2SA1175
Q14 2SA1175
Q15 2SA1175
Q24 2SC2785
Q34 2SA1175
D20 1SS148
D19 1SS148
D11 1SS148
D2 1SS148
D1 1SS148
D17 1SS148
D18 1SS148
D10 RD13ESB2
D4 1SS148
D9 1SS148
D8 1SS148
D7 1SS148
VCO
P.C.
SUB BRT
SYNC
H.BLK
V.BLK
BLK
ON
OFF
S1
RV4
TP1
TP2
TP3
TP4
TP5
TP6
TP10
TP11
TP12
TP13
TP15
TP16
TP17
TP18
TP19
TP20
TP21
12V
15V
-12V
-15V
Vcc
CLAMP
ABL
BRT
PIC
R.GND
R.IN
R.OUT
G.GND
G.IN
G.OUT
B.IN
B.OUT
BLK
GND
IC6, 7, 15, 16, 17, 18
(VDD:14PIN VSS:7PIN)

CAUTION
Should replacement be required, replace only with the value originally used.


15 16 17 18 19 20 21 22 23 24 25 26 27 28
BB-7
RED
12V
IK (R)
BB-8
GREEN
IK (G)
BB-9
BLUE
IK (B)
IC5 CXA1044AP
IC8
IC9 RC4558D
IC10 RC4558DQ
R-DRIVE
G-DRIVE
B-DRIVE
TOTAL
PEAK
S-T
V901 SD-187(R) TUBE
V902 SD-187(G) TUBE
V903 SD-187(B) TUBE
TO DY BOARD DY-2
TO HV BLOCK
TO F. PACK
TO PA BOARD PA-9
TO PA BOARD PA-10
TO PA BOARD PA-11
CR (RED VIDEO OUT)
CG (GREEN VIDEO OUT)
CB (BLUE VIDEO OUT)
CR-1
CR-2
CR-3
CR-4
CR-5
CG-1
CG-2
CG-3
CG-4
CG-5
CB-1
CB-2
CB-3
CB-4
CB-5
GND
230V
NL701
NL721
NL741
SG701
SG721
SG741

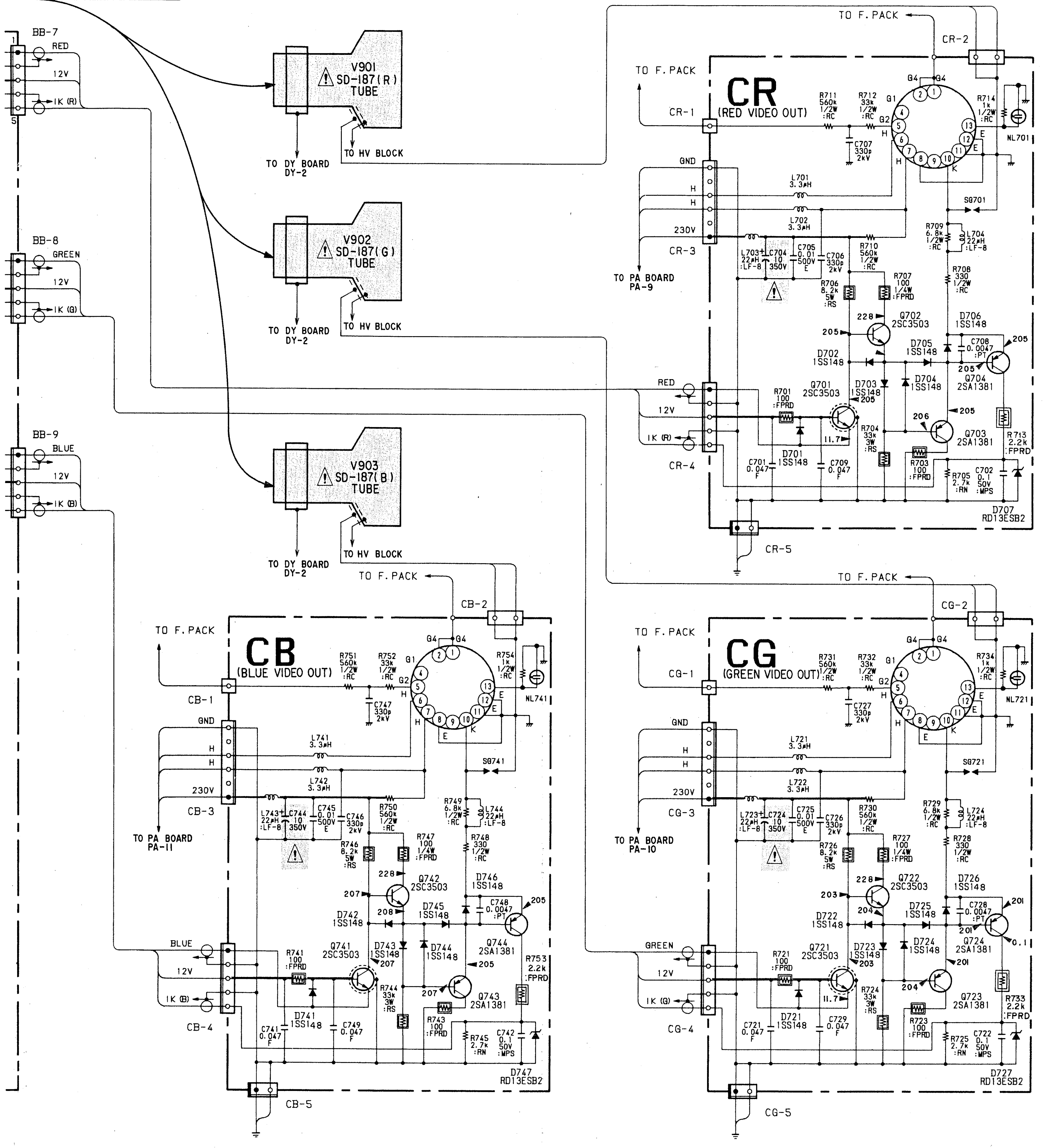
BB BOARD



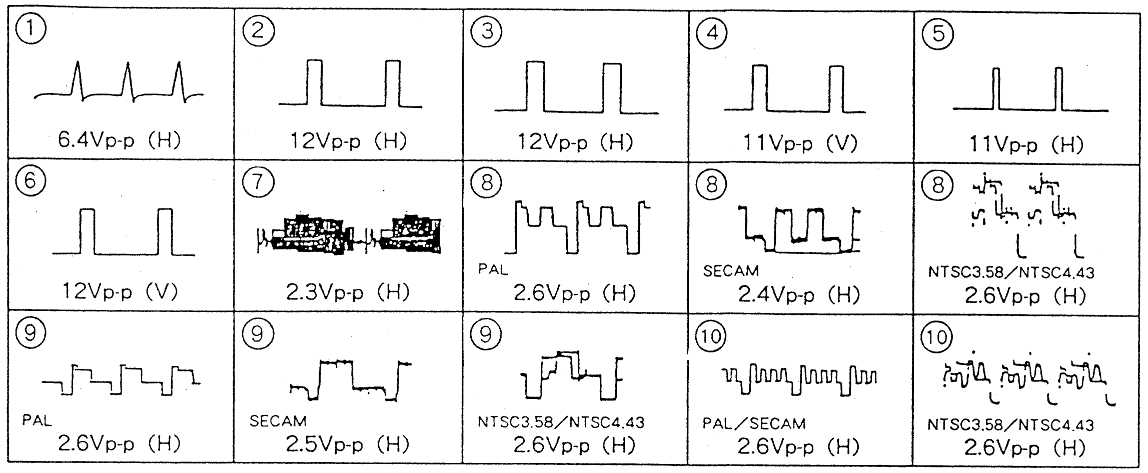
BB	IC1	μPC78M12H	+ 12V REQ
	2	RC79L12A	− 12V REQ
	3	HD14052BP	REG SW (R. G)
	4	HD14052BP	REG SW (B)
	5	CXA1044P	PIC／BRT CONT
	6	HD14069UBP	INV
	7	TC4071BP	V. BLK
	8	RC4558DQ	LEVEL SHIFT
	9	RC4558DQ	PIC BUFF
	10	RC4558DQ	ABL
	11	HD14046BP	H. PLL
	12	TC4024BP	H. COUNTER
	13	HD14046BP	V. PLL
	14	TC4040BP	V. COUNTER
	15	TC4081BP	GATE-1
	16	TC4082BP	GATE-2
	17	TC504013BP	H. V. BLK-1
	18	TC504013BP	H. V. BLK-2
	Q1	2SC2785	B. B BUFF-1
	2	2SA1175	R. BUFF-3
	3	2SC2785	R. DRIVE
	4	DTC144ES	R. RAS SW
	5	2SA1175	G. BUFF-3
	6	2SC2785	G. DRIVE
	7	DTC144ES	G. RAS SW
	8	2SA1175	B. BUFF-3
	9	2SC2785	B. DRIVE

CR	Q701	2SC3503	R-VIDEO AMP	CG
	702	2SC3503	R-VIDEO OUT	
	703	2SA1381	R-IK DET-1	
	704	2SA1381	R-IK DET-2	
	D701	1SS148	R-PROTECT-1	
	702	1SS148	R-PROTECT-2	
	703	1SS148	R-BIAS	
	704	1SS148	R-PROTECT-3	
	705	1SS148	R-PROTECT-4	
	706	1SS148	R-PROTECT-5	
	707	RD13ESB2	R-PROTECT-6	

ION
e required, replace
iginally used.


BB-7
RED
12V
IK (R)
BB-8
GREEN
12V
IK (G)
BB-9
BLUE
12V
IK (B)
V901 SD-187(R) TUBE
V902 SD-187(G) TUBE
V903 SD-187(B) TUBE
TO DY BOARD DY-2
TO HV BLOCK
TO F. PACK
CR
(RED VIDEO OUT)
CG
(GREEN VIDEO OUT)
CB
(BLUE VIDEO OUT)
CR-1
CR-2
CR-3
CR-4
CR-5
CG-1
CG-2
CG-3
CG-4
CG-5
CB-1
CB-2
CB-3
CB-4
CB-5
GND
230V
TO PA BOARD PA-9
TO PA BOARD PA-10
TO PA BOARD PA-11
Q701 2SC3503
Q702 2SC3503
Q703 2SA1381
Q704 2SA1381
Q721 2SC3503
Q722 2SC3503
Q723 2SA1381
Q724 2SA1381
Q741 2SC3503
Q742 2SC3503
Q743 2SA1381
Q744 2SA1381
D707 RD13ESB2
D727 RD13ESB2
D747 RD13ESB2
NL701
NL721
NL741
SG701
SG721
SG741

BB BOARD

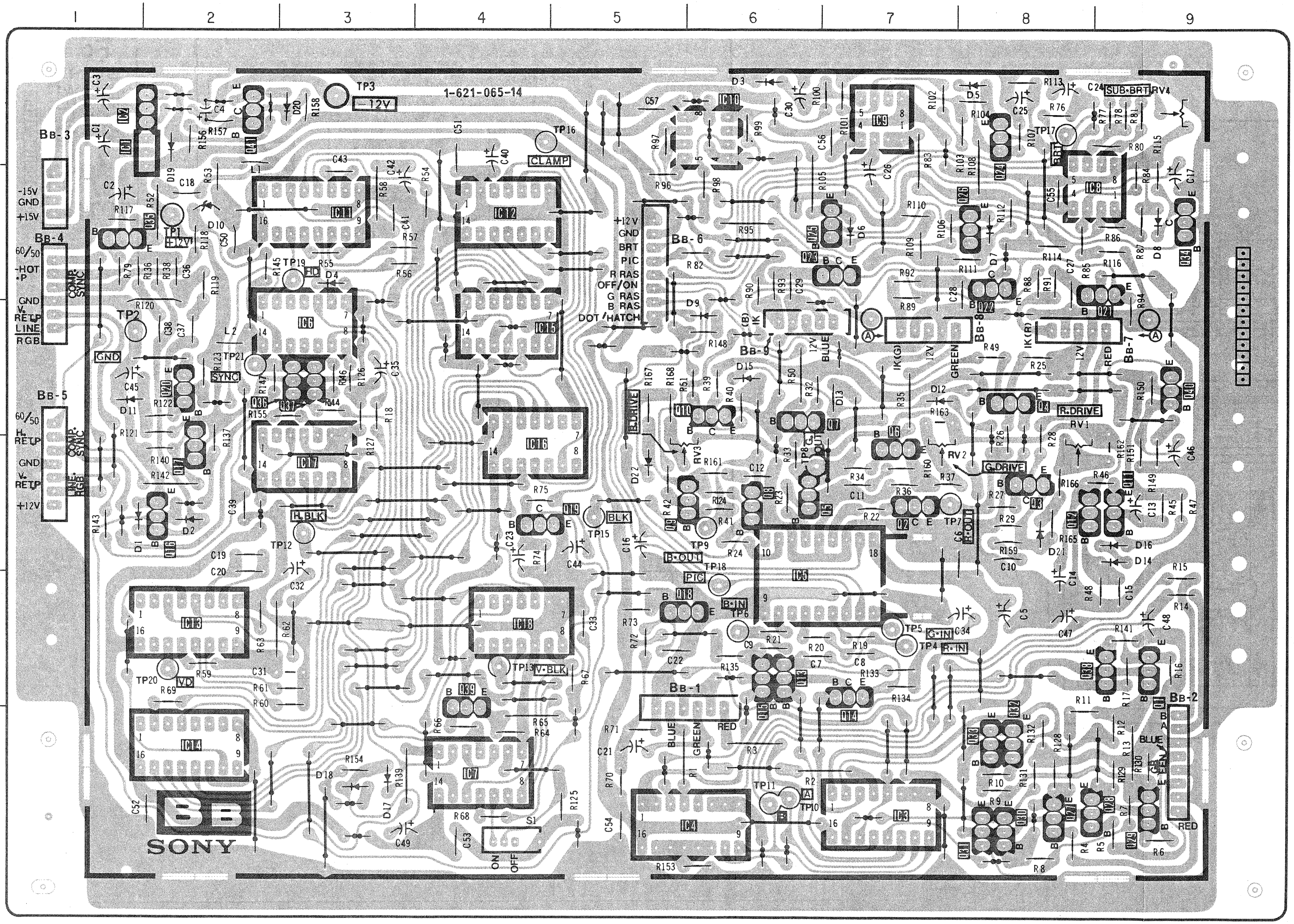

①
6.4Vp-p (H)
②
12Vp-p (H)
③
12Vp-p (H)
④
11Vp-p (V)
⑤
11Vp-p (H)
⑥
12Vp-p (V)
⑦
2.3Vp-p (H)
⑧
PAL
2.6Vp-p (H)
⑧
SECAM
2.4Vp-p (H)
⑧
NTSC3.58/NTSC4.43
2.6Vp-p (H)
⑨
PAL
2.6Vp-p (H)
⑨
SECAM
2.5Vp-p (H)
⑨
NTSC3.58/NTSC4.43
2.6Vp-p (H)
⑩
PAL/SECAM
2.6Vp-p (H)
⑩
NTSC3.58/NTSC4.43
2.6Vp-p (H)

BB	IC1	μPC78M12H	+12V REQ	Q10	DTC144ES	B. RAS SW	Q38	2SC2785	B. B BUFF-2
	2	RC79L12A	−12V REQ	11	2SC2230A	BAIAS-1	39	2SC2785	BLK BUFF
	3	HD14052BP	REG SW (R. G)	12	2SA1175	BAIAS-2	40	2SC2785	LIMITER
	4	HD14052BP	REG SW (B)	13	2SA1175	R. BUFF-2	41	DTC144ES	−12V PROTE
	5	CXA1044P	PIC/BRT CONT	14	2SA1175	G. BUFF-2			
	6	HD14069UBP	INV	15	2SA1175	B. BUFF-2	D1	1SS148	H. P SUP-1
	7	TC4071BP	V. BLK	16	2SC2785	H. P INV-1	2	1SS148	H. P SUP-2
	8	RC4558DQ	LEVEL SHIFT	17	2SC2785	H. P BUFF	3	1SS148	CLAMP-1
	9	RC4558DQ	PIC BUFF	18	2SC2785	DOT SW-1	4	1SS148	V. RESET SW
	10	RC4558DQ	ABL	19	2SC2785	DOT SW-2	5	1SS148	TOTAL ABL
	11	HD14046BP	H. PLL	20	2SC2785	H. P INV	6	1SS148	PEAK ABL
	12	TC4024BP	H. COUNTER	21	2SC2785	IK (R) BUFF	7	1SS148	S. T ABL
	13	HD14046BP	V. PLL	22	2SC2785	IK (G) BUFF	8	1SS148	PIC ABL
	14	TC4040BP	V. COUNTER	23	2SC2785	IK (B) BUFF	9	1SS148	BRT SW
	15	TC4081BP	GATE-1	24	2SC2785	TOTAL ABL	10	RD13ESB2	PROTECTOR
	16	TC4082BP	GATE-2	25	2SC2785	PEAK ABL	11	1SS148	CLAMP-2
	17	TC504013BP	H. V. BLK-1	26	2SC2785	S. T ABL	12	1SS148	R. LIMIT
	18	TC504013BP	H. V. BLK-2	27	2SC2785	R. BUFF-1	13	1SS148	G. LIMIT
				28	2SC2785	G. BUFF-1	14	1SS148	BAIAS-1
	Q1	2SC2785	B. B BUFF-1	29	2SC2785	B. BUFF-1	15	1SS148	B. LIMIT
	2	2SA1175	R. BUFF-3	30	2SC2785	C. B (R) BUFF-1	16	1SS148	BAIAS-2
	3	2SC2785	R. DRIVE	31	2SC2785	C. B (R) BUFF-2	17	1SS148	V. P DL-1
	4	DTC144ES	R. RAS SW	32	2SC2785	C. B (G) BUFF-1	18	1SS148	V. P DL-2
	5	2SA1175	G. BUFF-3	33	2SC2785	C. B (G) BUFF-2	19	1SS148	PROTE-1
	6	2SC2785	G. DRIVE	34	2SA1175	PIC ABL	20	1SS148	PROTE-2
	7	DTC144ES	G. RAS SW	35	2SC2785	SYNC BUFF-1	21	1SS148	
	8	2SA1175	B. BUFF-3	36	2SC2785	SYNC BUFF-2	22	1SS148	
	9	2SC2785	B. DRIVE	37	2SA1175	SYNC BUFF-3			

CR	Q701	2SC3503	R-VIDEO AMP	CG	Q721	2SC3503	G-VIDEO AMP	CB	Q741	2SC3503	B-VIDEO AMP
	702	2SC3503	R-VIDEO OUT		722	2SC3503	G-VIDEO OUT		742	2SC3503	B-VIDEO OUT
	703	2SA1381	R-IK DET-1		723	2SA1381	G-IK DET-1		743	2SA1381	B-IK DET-1
	704	2SA1381	R-IK DET-2		724	2SA1381	G-IK DET-2		744	2SA1381	B-IK DET-2
	D701	1SS148	R-PROTECT-1		D721	1SS148	G-PROTECT-1		D741	1SS148	B-PROTECT-1
	702	1SS148	R-PROTECT-2		722	1SS148	G-PROTECT-2		742	1SS148	B-PROTECT-2
	703	1SS148	R-BIAS		723	1SS148	G-BIAS		743	1SS148	B-BIAS
	704	1SS148	R-PROTECT-3		724	1SS148	G-PROTECT-3		744	1SS148	B-PROTECT-3
	705	1SS148	R-PROTECT-4		725	1SS148	G-PROTECT-4		745	1SS148	B-PROTECT-4
	706	1SS148	R-PROTECT-5		726	1SS148	G-PROTECT-5		746	1SS148	B-PROTECT-5
	707	RD13ESB2	R-PROTECT-6		727	RD13ESB2	G-PROTECT-6		747	RD13ESB2	B-PROTECT-6

BB [R. G. B PROCESS]

– BB BOARD –


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
1-621-065-14
BB-3
-15V
GND
+15V
BB-4
60/50
-HOT
•P
GND
V. RETP
LINE
RGB
COMP. SYNC
BB-5
60/50
H. RETP
GND
V. RETP
+12V
BB-6
+12V
GND
BRT
PIC
R RAS
OFF/ON
G RAS
B RAS
DOT/HATCH
BB-9
BB-8
BB-7
BB-1
BB-2
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
TP12
TP13
TP15
TP16
TP17
TP18
TP19
TP20
TP21
-12V
+12V
CLAMP
HD
SYNC
GND
H.BLK
BLK
B-OUT
PIC
B-IN
G-IN
R-IN
V.BLK
VD
B.DRIVE
G.DRIVE
R.DRIVE
R-OUT
G OUT
SUB-BRT
BRT
RV1
RV2
RV3
RV4
IK(B)
IK(G)
IK(R)
BLUE
GREEN
RED
12V
S1
ON
OFF
BB
SONY

BB BOARD

IC	
IC1	A-1
IC2	A-1
IC3	F-7
IC4	F-5
IC5	D-5
IC6	C-3
IC7	F-4
IC8	B-8
IC9	A-7
IC10	A-6
IC11	A-3
IC12	B-4
IC13	E-2
IC14	F-2
IC15	C-4
IC16	D-4
IC17	D-3
IC18	E-4

TRANSISTOR	
Q1	E-9
Q2	D-7
Q3	D-8
Q4	C-8
Q5	D-6
Q6	D-7
Q7	C-6
Q8	D-6
Q9	D-6
Q10	C-6
Q11	D-9
Q12	D-8
Q13	E-6
Q14	E-7
Q15	E-6
Q16	D-2
Q17	D-2
Q18	E-5
Q19	D-4
Q20	C-2
Q21	B-9
Q22	B-8
Q23	B-7
Q24	A-8
Q25	B-7
Q26	B-8
Q27	F-8
Q28	F-9
Q29	F-9
Q30	F-8
Q31	F-8
Q32	F-8
Q33	F-8
Q34	B-9
Q35	B-1
Q36	C-3
Q37	C-3
Q38	E-9
Q39	E-4
Q40	C-
Q41	A-2

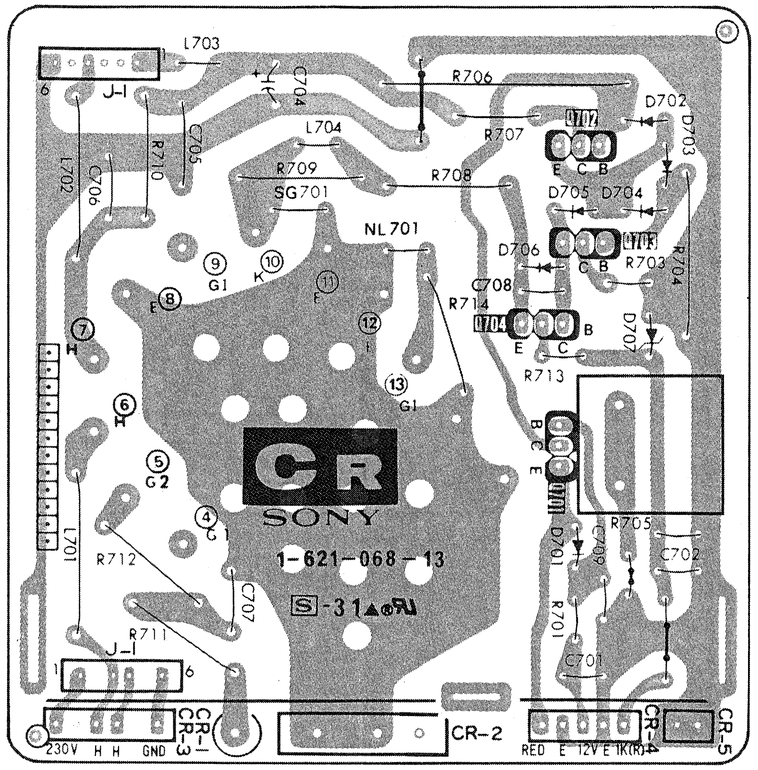
DIODE	
D1	D-1
D2	D-2
D3	A-6
D4	B-3
D5	A-8
D6	B-7
D7	B-8
D8	B-9
D9	C-6
D10	B-2
D11	C-1
D12	C-7
D13	C-7
D14	D-9
D15	C-6
D16	D-9
D17	F-3
D18	F-3
D19	A-2
D20	A-3
D21	D-8
D22	D-5

VARIABLE RESISTOR	
RV1	D-8
RV2	D-7
RV3	D-5
RV4	A-9

Q26	B-8
Q27	F-8
Q28	F-9
Q29	F-9
Q30	F-8
Q31	F-8
Q32	F-8
Q33	F-8
Q34	B-9
Q35	B-1
Q36	C-3
Q37	C-3
Q38	E-9
Q39	E-4
Q40	C-
Q41	A-2
DIODE	
D1	D-1
D2	D-2
D3	A-6
D4	B-3
D5	A-8
D6	B-7
D7	B-8
D8	B-9
D9	C-6
D10	B-2
D11	C-1
D12	C-7
D13	C-7
D14	D-9
D15	C-6
D16	D-9
D17	F-3
D18	F-3
D19	A-2
D20	A-3
D21	D-8
D22	D-5
VARIABLE RESISTOR	
RV1	D-8
RV2	D-7
RV3	D-5
RV4	A-9

CR [RED VIDEO OUT]

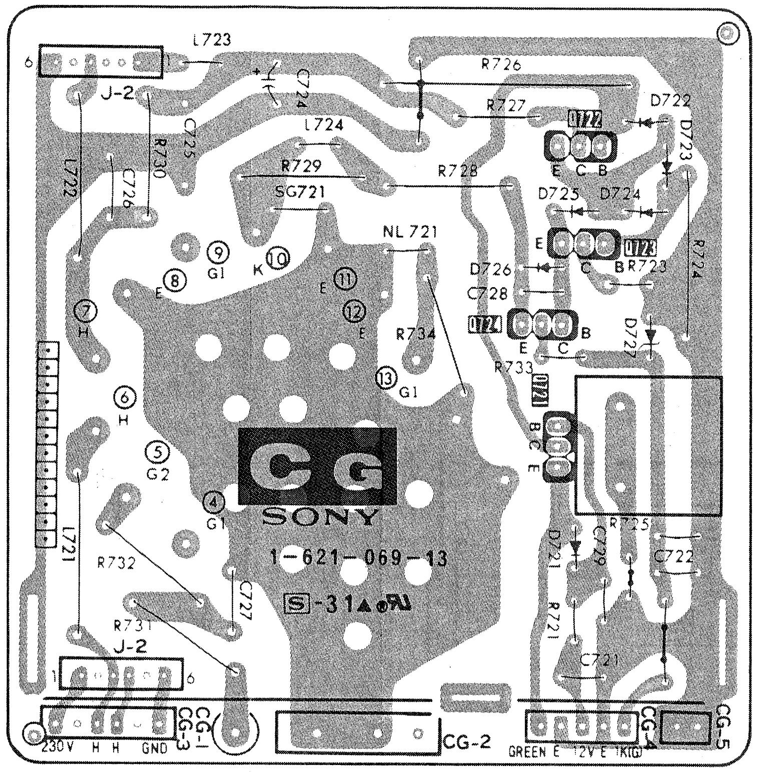
– CR BOARD –



L703
J-1
C704
R706
D702
D703
Q702
E C B
R707
L704
C705
R710
L702
C706
R709
SG701
R708
D705
D704
NL701
D706
Q703
R703
R704
C708
R714
Q704
D707
R713
Cr
SONY
1-621-068-13
S-31
C709
D701
R705
C702
R701
C701
R712
R711
C707
J-1
230V H H GND
CR-1
CR-3
CR-2
RED E 12V E 1K(R)
CR-4
CR-5

CG [GREEN VIDEO OUT]

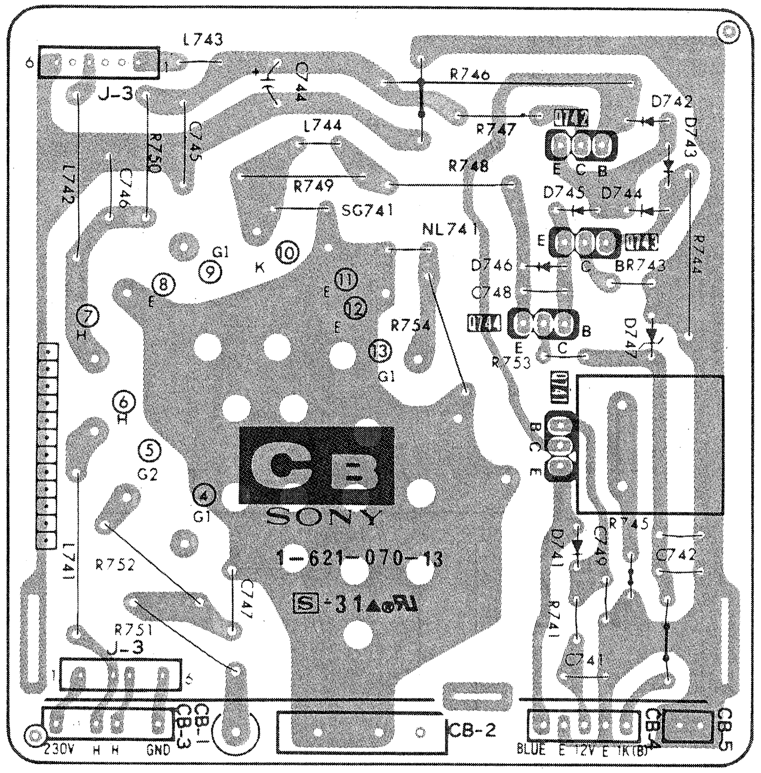
– CG BOARD –



L723
J-2
C724
R726
D722
D723
R727
Q722
L724
C725
R730
L722
C726
R729
SG721
R728
D725
D724
NL721
Q723
R723
R724
D726
C728
Q724
R734
D727
R733
Q721
Cg
SONY
1-621-069-13
S-31
R725
C729
D721
C722
R721
C721
R732
R731
C727
J-2
230V H H GND
CG-1
CG-3
CG-2
GREEN E 12V E 1K(G)
CG-4
CG-5

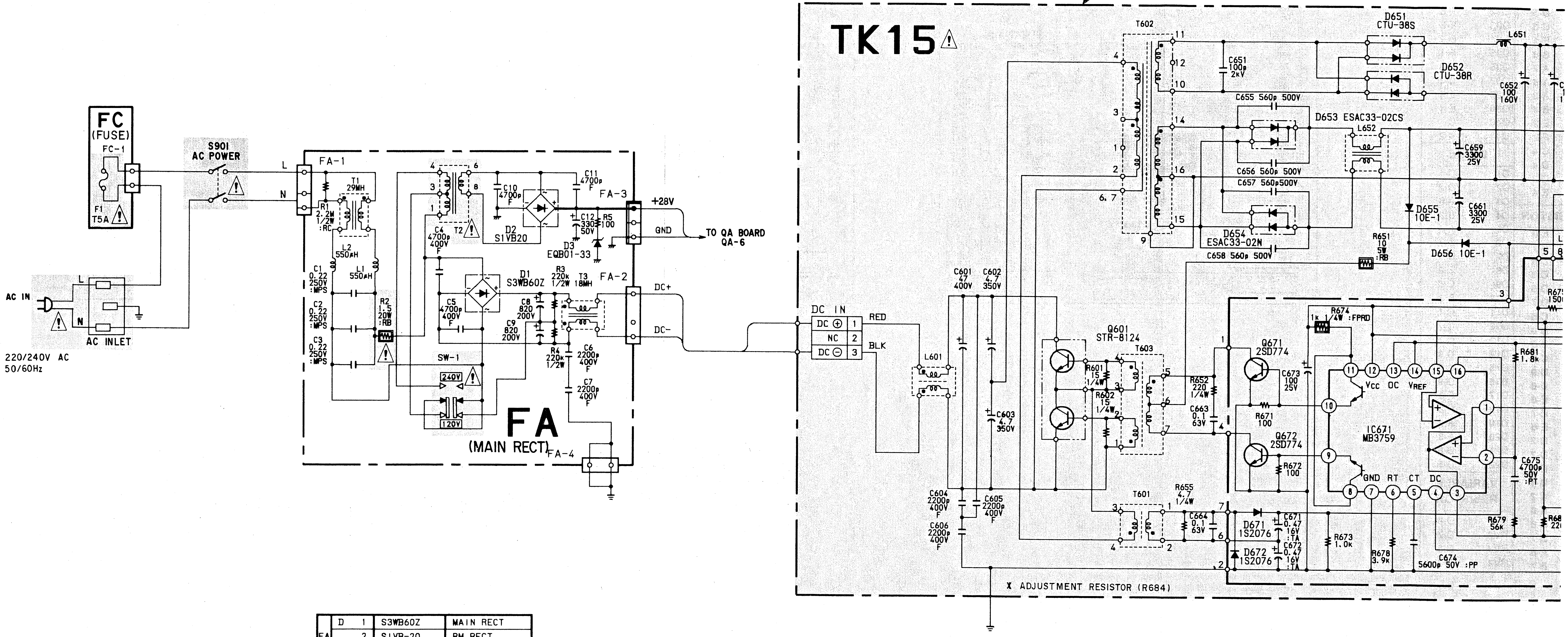
CB [BLUE VIDEO OUT]

– CB BOARD –

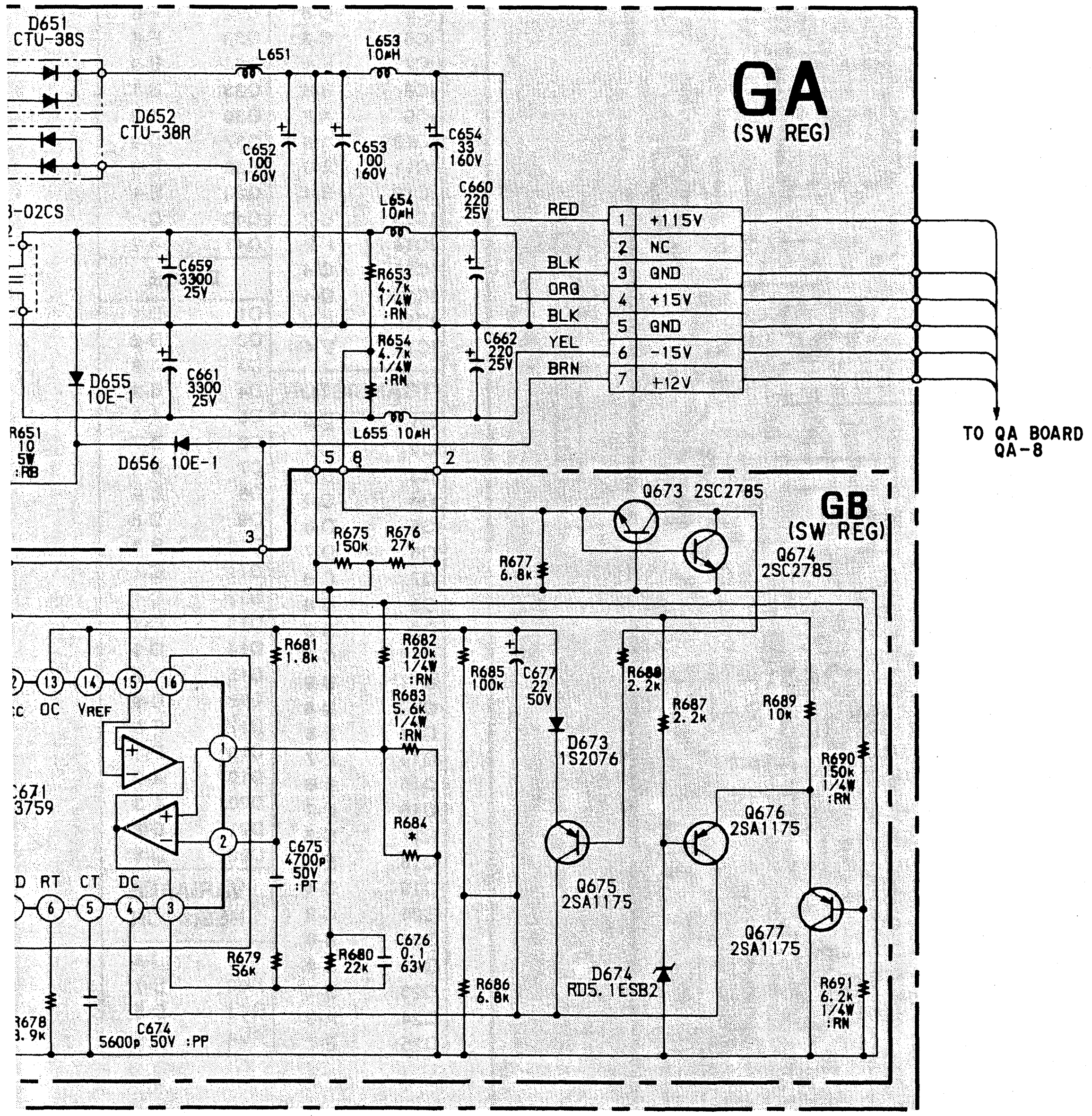


L743
J-3
C744
R746
D742
D743
R747
Q742
L744
C745
R750
L742
C746
R748
R749
SG741
D745
D744
NL741
Q743
R743
R744
D746
C748
Q744
R754
R753
D747
Q741
CB
SONY
1-621-070-13
S-31
R745
C749
D741
C742
R741
C741
R752
R751
C747
J-3
230V H H GND
CB-1
CB-3
CB-2
BLUE E 12V E 1K(B)
CB-4
CB-5

CAUTION
Should replacement be required, replace only with the value originally used.

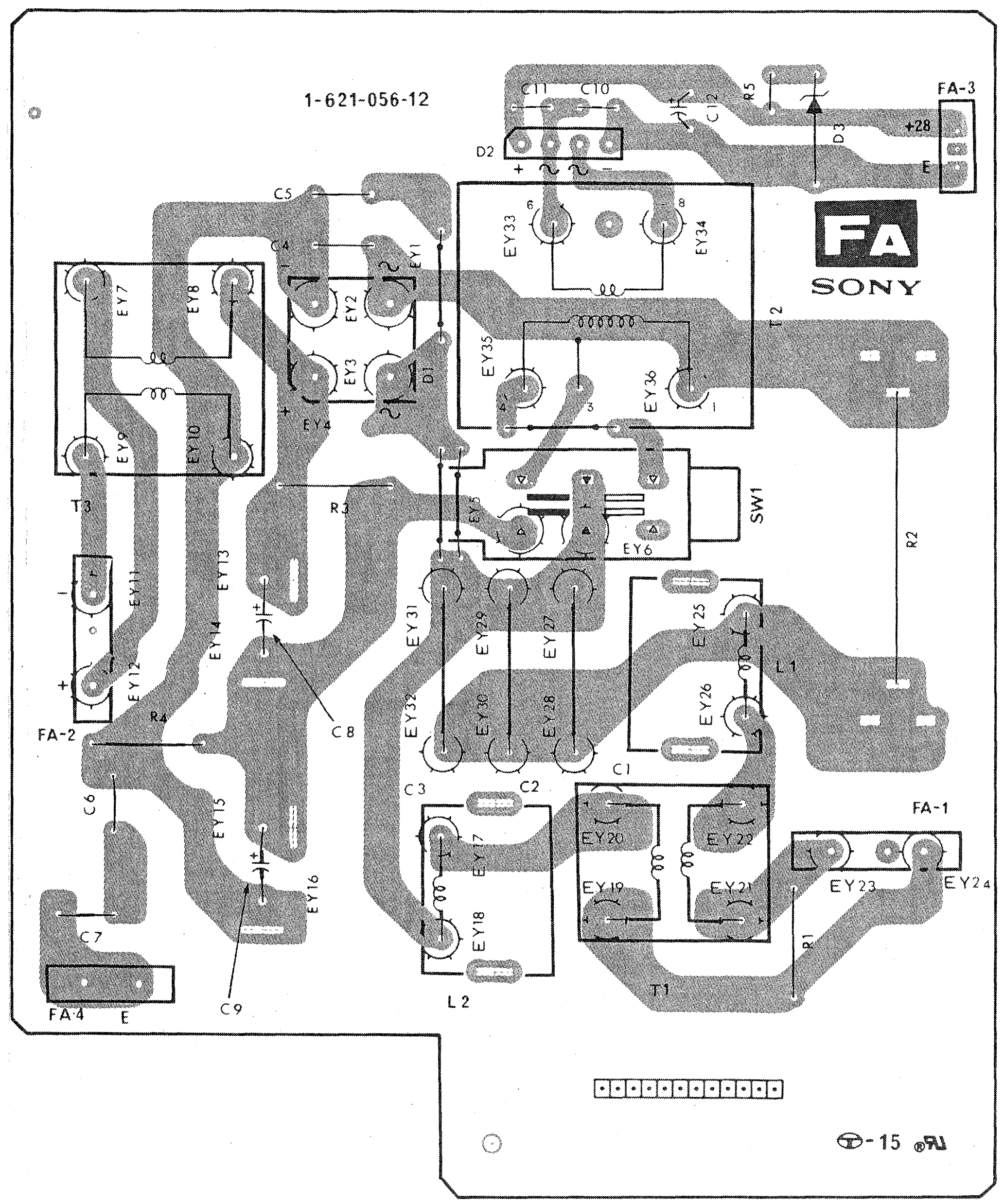

FC
(FUSE)
FC-1
F1
T5A
S901
AC POWER
AC IN
AC INLET
220/240V AC
50/60Hz
L
N
FA-1
T1
29MH
R1
2.2M
1/2W
:RC
L2
550μH
L1
550μH
C1
0.22
250V
:MPS
C2
0.22
250V
:MPS
C3
0.22
250V
:MPS
R2
1.5
20W
:RB
SW-1
240V
120V
T2
C4
4700p
400V
F
C5
4700p
400V
F
C10
4700p
F
C11
4700p
F
D2
S1VB20
C12
330
50V
R5
100
D3
EQB01-33
FA-3
+28V
GND
TO QA BOARD
QA-6
D1
S3WB60Z
R3
220k
1/2W
T3
18MH
FA-2
DC+
DC-
C8
820
200V
C9
820
200V
R4
220k
1/2W
C6
2200p
400V
F
C7
2200p
400V
F
FA
(MAIN RECT)
FA-4
TK15
T602
D651
CTU-38S
D652
CTU-38R
L651
C651
100p
2kV
C652
100
160V
C655 560p 500V
C656 560p 500V
C657 560p500V
C658 560p 500V
D653 ESAC33-02CS
D654
ESAC33-02N
L652
C659
3300
25V
C661
3300
25V
D655
10E-1
D656 10E-1
R651
10
5W
:RB
DC IN
DC ⊕
NC
DC ⊖
RED
BLK
L601
C601
47
400V
C602
4.7
350V
C603
4.7
350V
C604
2200p
400V
F
C605
2200p
400V
F
C606
2200p
400V
F
Q601
STR-8124
T603
R601
15
1/4W
R602
15
1/4W
R652
220
1/4W
C663
0.1
63V
T601
R655
4.7
1/4W
C664
0.1
63V
Q671
2SD774
Q672
2SD774
C673
100
25V
R671
100
R672
100
R674
1k 1/4W :FPRD
IC671
MB3759
Vcc
OC
VREF
GND
RT
CT
DC
D671
1S2076
D672
1S2076
C671
0.47
16V
:TA
C672
0.47
16V
:TA
R673
1.0k
R678
3.9k
C674
5600p 50V :PP
C675
4700p
50V
:PT
R679
56k
R681
1.8k
X ADJUSTMENT RESISTOR (R684)

FA	D			
		1	S3WB60Z	MAIN RECT
		2	S1VB-20	RM RECT
		3	EQB01-33	33V ZENER

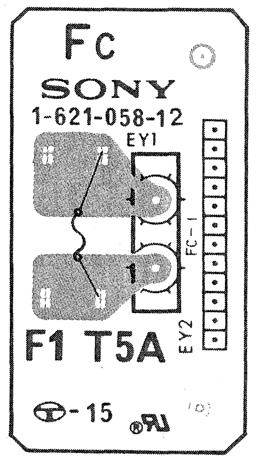

D651
CTU-38S
L651
L653
10µH
D652
CTU-38R
C652
100
160V
C653
100
160V
C654
33
160V
GA
(SW REG)
C660
220
25V
L654
10µH
-02CS
C659
3300
25V
R653
4.7k
1/4W
:RN
R654
4.7k
1/4W
:RN
C662
220
25V
C661
3300
25V
D655
10E-1
RED
BLK
ORG
BLK
YEL
BRN
1 +115V
2 NC
3 GND
4 +15V
5 GND
6 -15V
7 +12V
TO QA BOARD
QA-8
R651
10
5W
:RB
D656 10E-1
L655 10µH
5
6
2
3
Q673 2SC2785
GB
(SW REG)
Q674
2SC2785
R675
150k
R676
27k
R677
6.8k
R681
1.8k
R682
120k
1/4W
:RN
R683
5.6k
1/4W
:RN
R685
100k
C677
22
50V
R688
2.2k
R687
2.2k
R689
10k
R690
150k
1/4W
:RN
13 14 15 16
OC
VREF
C671
3759
D673
1S2076
R684
*
C675
4700p
50V
:PT
Q676
2SA1175
Q675
2SA1175
Q677
2SA1175
RT CT DC
6 5 4 3
1
2
R679
56k
R680
22k
C676
0.1
63V
R686
6.8k
D674
RD5.1ESB2
R691
6.2k
1/4W
:RN
R678
3.9k
C674
5600p 50V :PP

FA [MAIN RECT] **FC** [FUSE]

– **FA BOARD** –

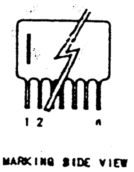

1-621-056-12
C11
C10
C12
R5
D3
FA-3
+28
E
D2
C5
C4
EY1
EY2
EY3
EY4
D1
EY33
EY34
EY35
EY36
T2
FA
SONY
EY7
EY8
EY9
EY10
T3
R3
EY5
EY6
SW1
R2
EY11
EY12
EY13
EY14
EY31
EY29
EY27
EY25
EY26
L1
FA-2
R4
C8
EY32
EY30
EY28
C6
C3
C2
C1
EY15
EY16
EY17
EY18
EY20
EY22
EY19
EY21
FA-1
EY23
EY24
C7
C9
L2
R1
T1
FA-4
E
-15

– **FC BOARD** –

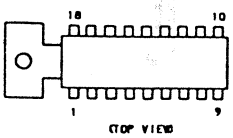

Fc
SONY
1-621-058-12
EY1
FC-1
EY2
F1 T5A
-15

7-6. SEMICONDUCTORS

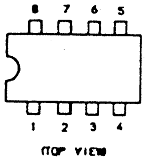
BX-1121
BX-1122


1 2
n
MARKING SIDE VIEW

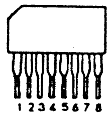
CXA1044AP


18
10
1
9
TOP VIEW

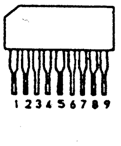
CX-7916
LM393P
RC4558DQ
RC4558P
TL082CP
μPC393C
μPC4558C
μPC4570C


8 7 6 5
1 2 3 4
TOP VIEW

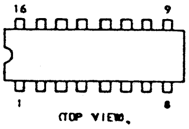
CX-7948A
CX20061
M5218L
M5218AL



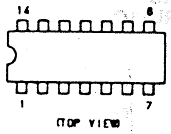
CX-894



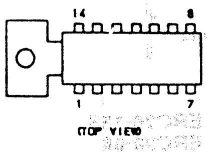
HD14046BP
HD14052BP
HD14053BP
MC14052BCP
MC14053BCP
TC4040BP


16
9
1
8
TOP VIEW

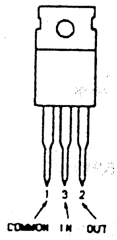
HD14069UBP
LM339N
MC1496P
MC14024BCP
MC14069UBCP
MC14071BCP
TC4024BP
TC4069UBP
TC4071BP
TC4081BP
TC4082BP
TC504013BP
μPC1394C
μPC339C
μPD4024BC


14
8
1
7
TOP VIEW

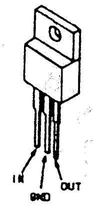
LA2600


14
8
1
7
TOP VIEW

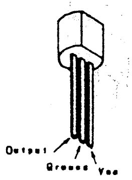
LM7812CT
NJM79M08FA
μPC78M12H


1 3 2
COMMON IN OUT

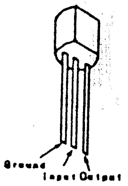
MC7805CT
M5F78M12L
NJM78M05A
RC78M09FA
μPC78M08H
μPC78M12H



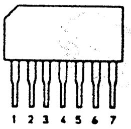
RC78L08A
RC78L09A
RC78L12A


Output
Ground
Vcc

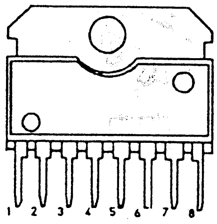
RC79L12A


Ground
Input
Output

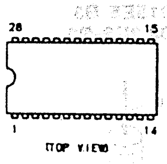
μPC1037HA



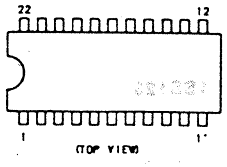
μPC1241H



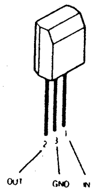
μPC1364C2
μPC1365C


28
15
1
14
TOP VIEW

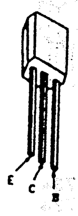
μPC1377C


22
12
1
11
TOP VIEW

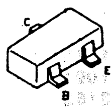
μPC78L12



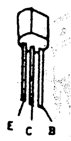
DTC144ES
DTC144WS
XDC144ES



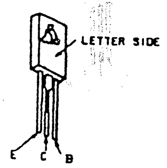
2SA812
2SA1162
2SC1623
DTC144WK



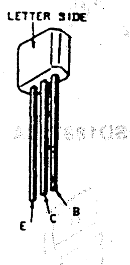
2SA844



2SA1142
2SA1381
2SA1407
2SC2688
2SC3503

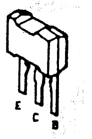

LETTER SIDE
E
C
B

2SA1175
2SC2785

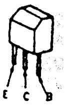

LETTER SIDE
E
C
B

— Continued on next page —

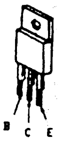
2SA1428-O
2SC3668



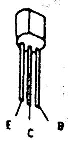
2SB734
2SD774



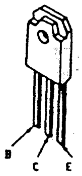
2SB1015
2SB1094
2SC3163
2SC3675
2SD1399-CA
2SD1406



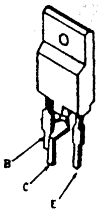
2SC2230A
2SC2383



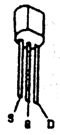
2SC2555



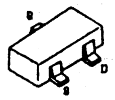
2SD1887-CA



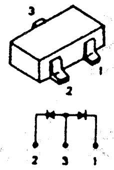
2SK105A-20



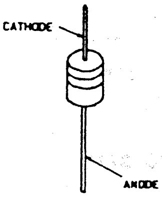
2SK160-K5
2SK160-K6



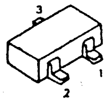
1S2835
1S2836



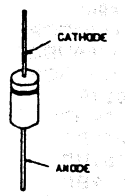
1SS119
1SS148
RD5.1ES-B2
RD6.8ES-B3
RD11ES-B2
RD13ES-B2
RD15ES-B3
RD8.2ES-B3


CATHODE
ANODE

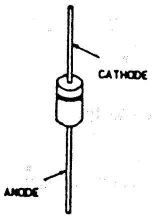
1SS123



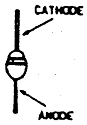
1S2837
ERD28-08S


CATHODE
ANODE

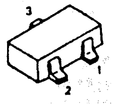
EQB01-33
ERC06-15S
RU-1
RU-1C


CATHODE
ANODE

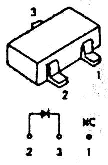
ERC26-15S
ERC38-06
GH3F
U05G
V11N
V19E


CATHODE
ANODE

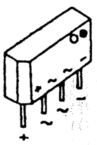
MA152WK



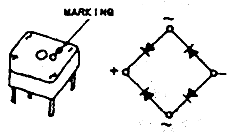
RD5.1M-B3



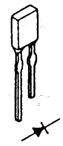
S1VB20
S1VB40



S3WB60Z



LN342GPH



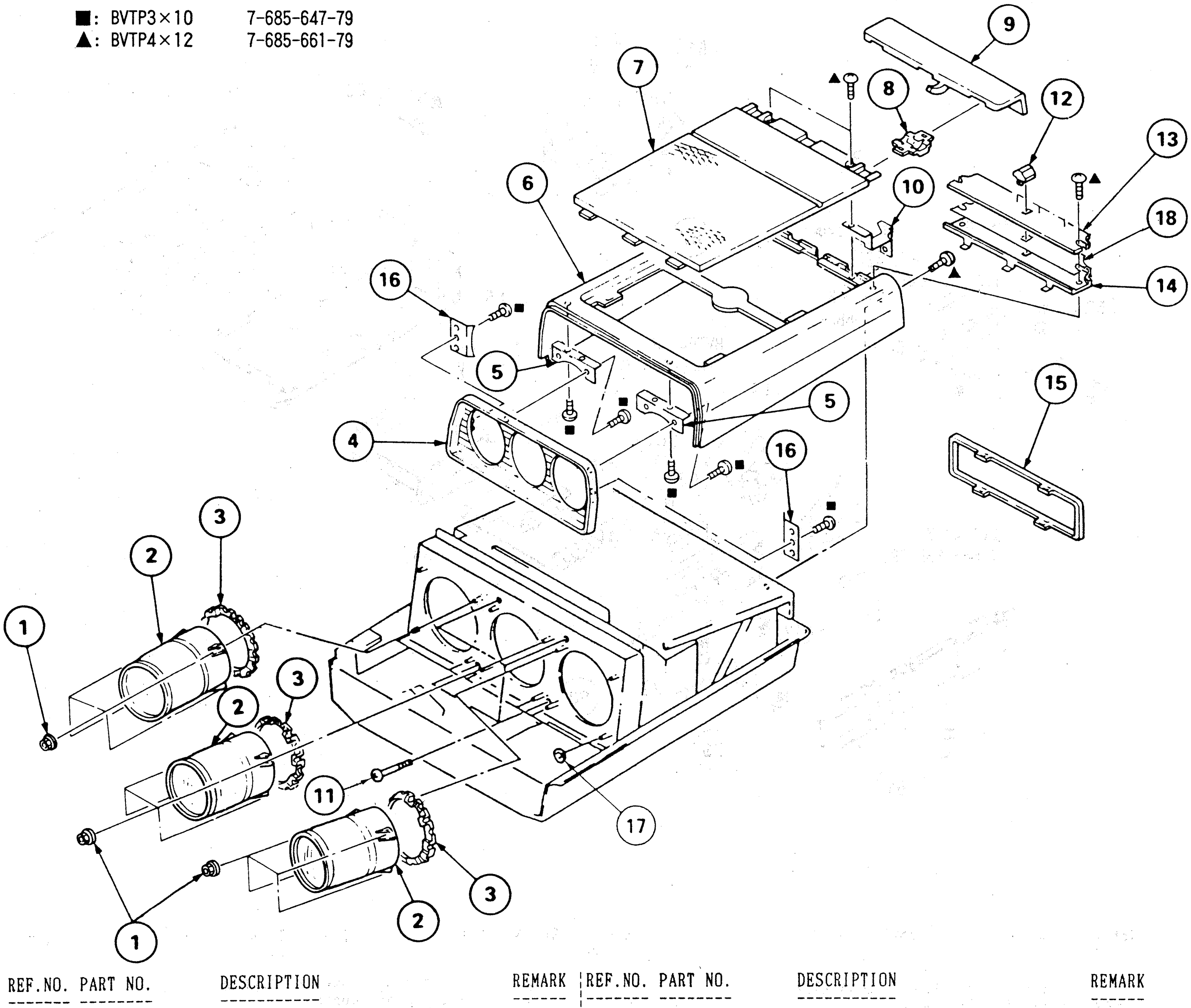
SECTION 8
EXPLODED VIEWS

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

8-1. LENS

■: BVTP3×10 7-685-647-79
▲: BVTP4×12 7-685-661-79

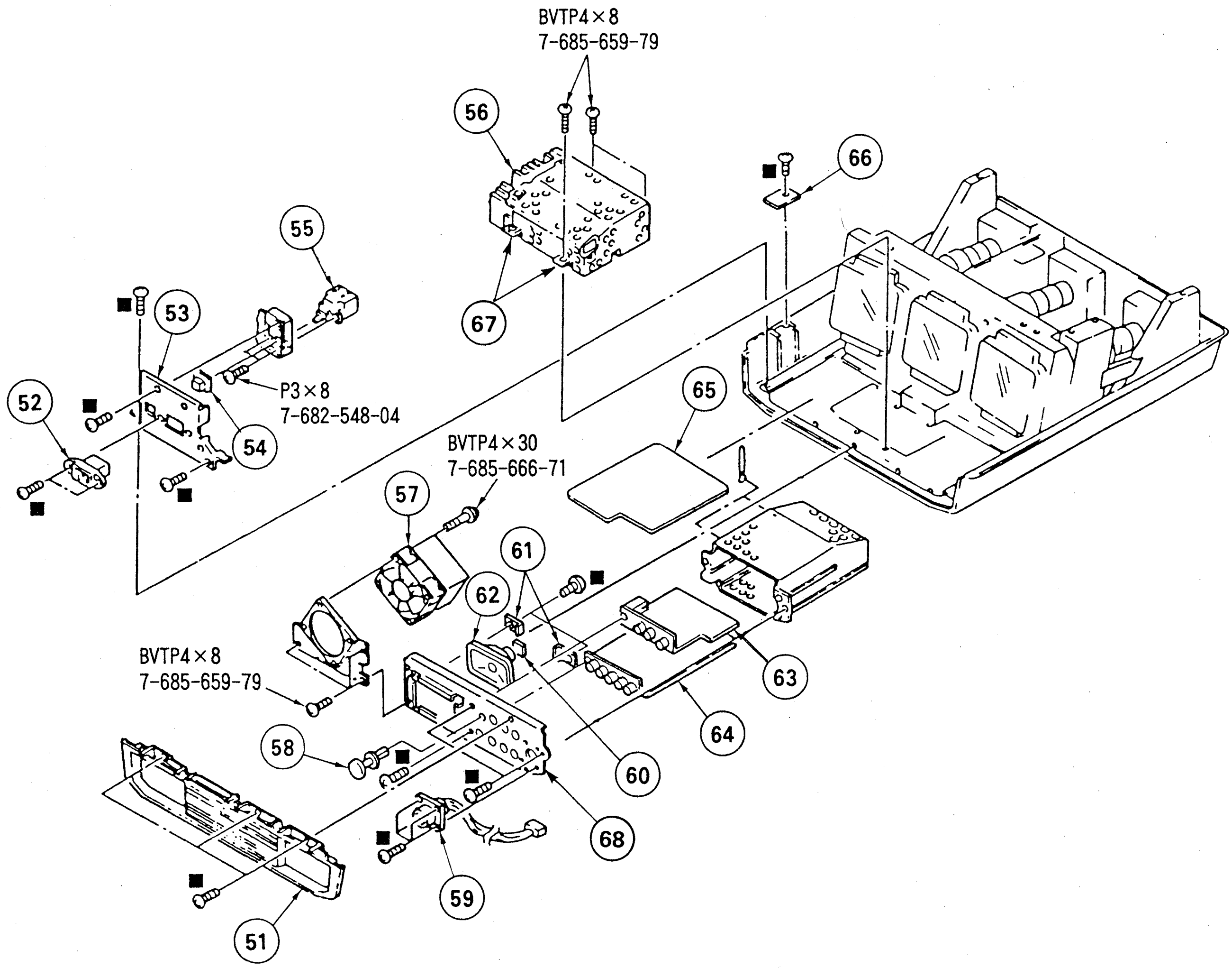


REF.NO.	PART NO.	DESCRIPTION	REMARK
1	4-304-749-00	NUT, FLANGE	
2	4-383-018-02	LENS (DELTA) (TAC-3)	
3	*4-378-642-01	WASHER, LENS	
4	4-383-064-01	PANEL, LENS	
5	*4-383-021-01	BRACKET, LENS PANEL	
6	4-378-655-01	CABINET	
7	X-4378-625-1	BOARD ASSY, TOP	
8	3-659-618-00	HINGE, SPRING	
9	X-4378-603-1	DOOR ASSY	
10	*4-378-670-01	BRACKET, MESH EARTH	
11	4-383-072-01	SCREW (4X45) (G), TAPPING,+ BV	
12	4-030-100-01	CAP, LAMP	
13	4-030-384-01	PLATE, ORNAMENTAL, CONTROL	
14	4-383-056-01	PANEL, CONTROL	
15	4-033-269-01	PANEL, REAR	
16	*4-383-038-01	BRACKET (B), LENS PANEL	
17	3-639-647-00	WASHER	
18	4-030-385-01	SHEET, CONTROL	

8-2. PANEL

■: BVTP3×8 7-685-646-79

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

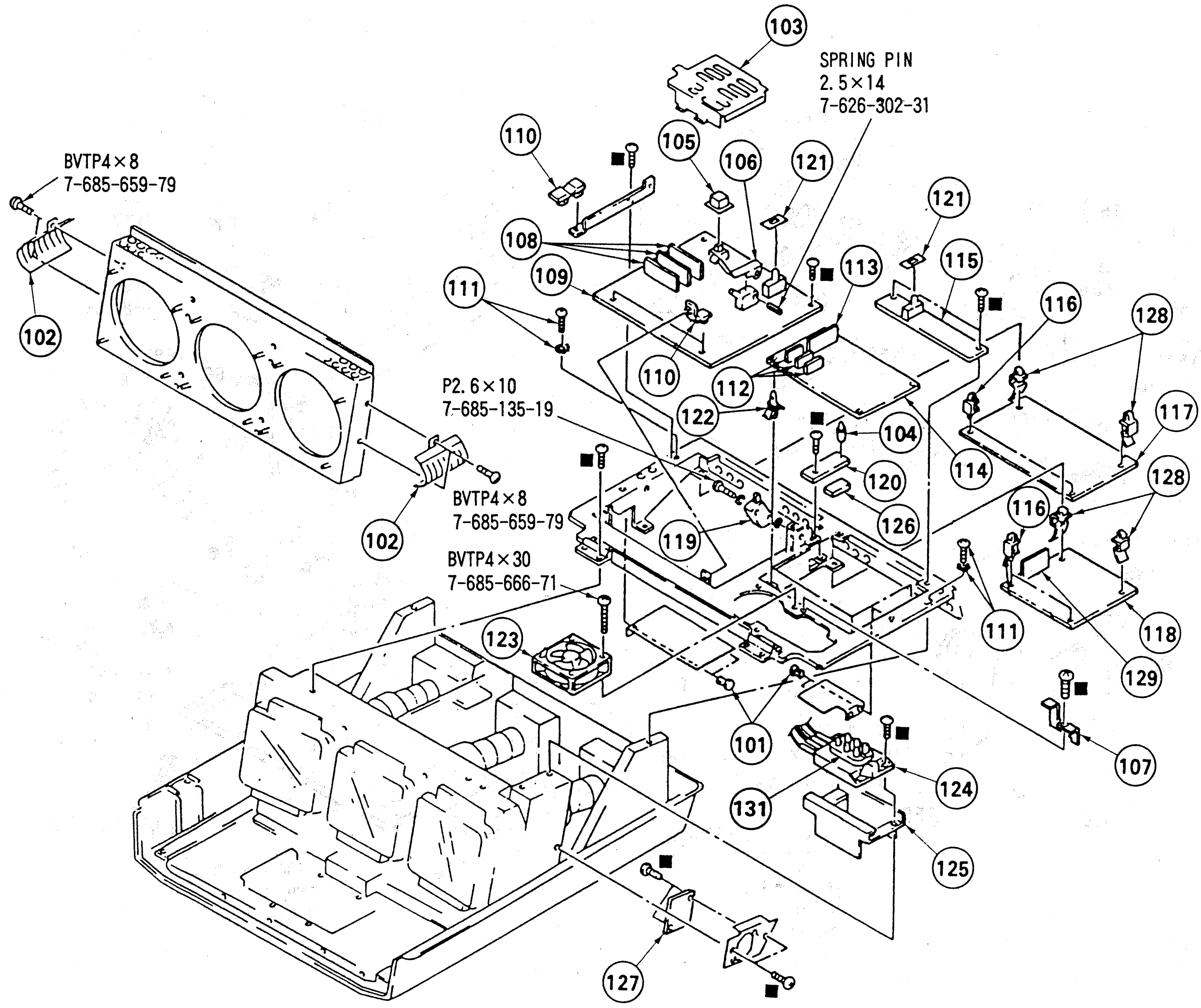

BVTP4×8
7-685-659-79
56
66
55
■
53
P3×8
7-682-548-04
52
■
54
■
■
67
65
BVTP4×30
7-685-666-71
57
61
■
62
63
BVTP4×8
7-685-659-79
64
58
■
60
■
68
■
59
■
51

REF.NO.	PART NO.	DESCRIPTION	REMARK
51	4-383-063-01	PANEL, CONNECTOR	
52 ⚠	.*1-580-375-21	INLET 3P	
53	4-383-049-01	PANEL (F), CONNECTOR	
54	4-362-811-00	BUTTON, MAIN POWER	
55 ⚠	.1-570-052-12	SWITCH, PUSH (AC POWER)(1 KEY)	
56 ⚠	.1-413-289-12	REGULATOR, SWITCHING (TK-15)	
57 ⚠	.1-541-449-11	FAN, DC (WITH SENSOR)	
58	4-374-303-01	RIVET, NYLON	
59	1-559-088-21	CONNECTOR ASSY, ROUND TYPE 14P	
60	4-383-088-01	CUSHION, RUBBER	
61	4-383-026-01	SPRING	
62	1-503-255-11	SPEAKER	
63	*A-1270-238-A	MOUNTED PCB, QB	
64	*A-1270-292-A	MOUNTED PCB, QA	
65	*1-621-056-11	FA BOARD	
66	*1-621-058-11	FC BOARD	
67	*2-277-426-01	CLAMP	
68	*4-032-826-01	CHASSIS (R), FRONT	

8-3. D BOARD

■: BVTP3×8 7-685-646-79

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

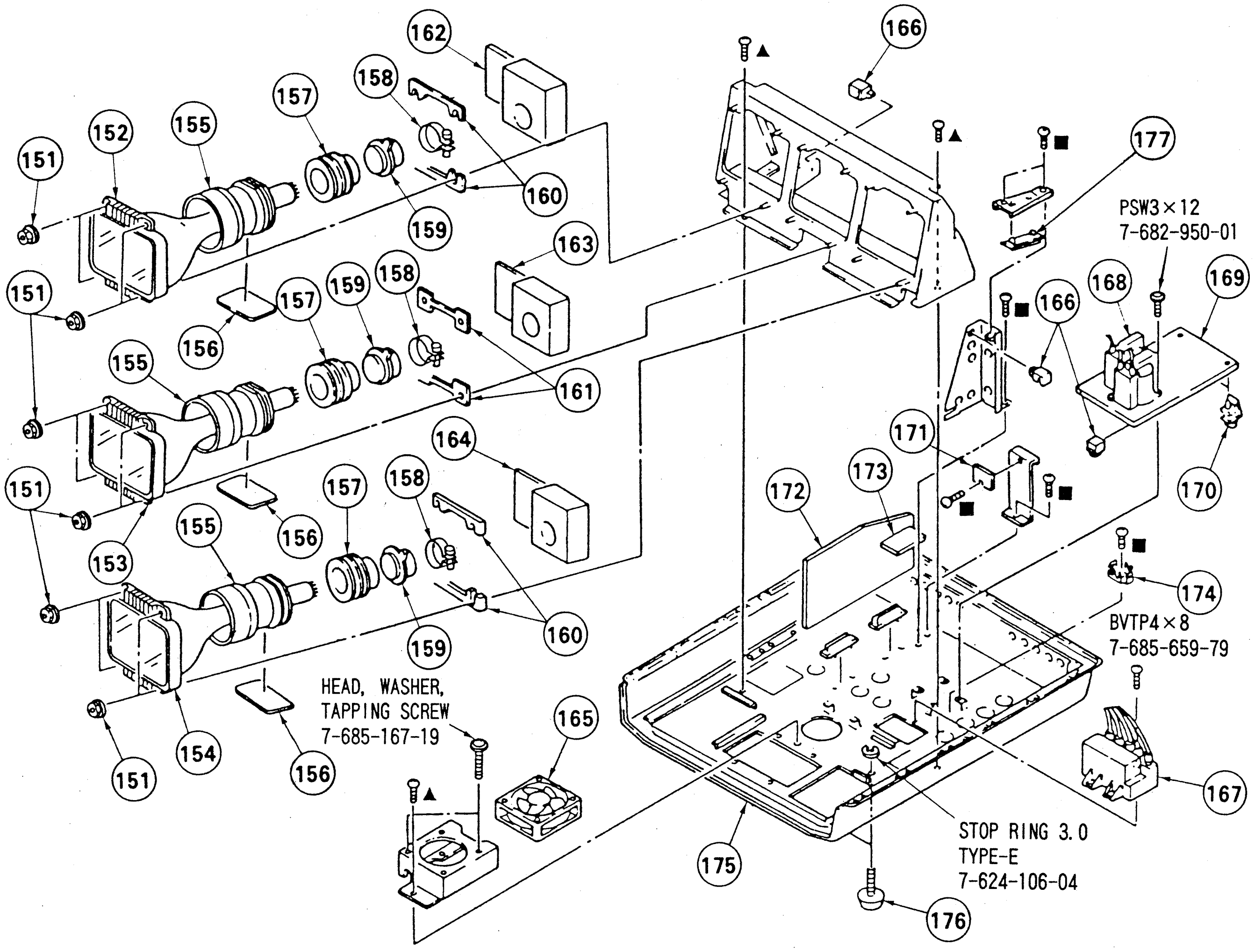

103
SPRING PIN
2.5×14
7-626-302-31
110
105
106
121
BVTP4×8
7-685-659-79
121
108
109
113
115
111
116
128
102
110
112
122
117
P2.6×10
7-685-135-19
104
114
120
128
BVTP4×8
7-685-659-79
116
126
102
119
BVTP4×30
7-685-666-71
111
118
123
129
101
107
131
124
125
127

REF.NO.	PART NO.	DESCRIPTION	REMARK
101	4-374-303-01	RIVET, NYLON	
102	*4-378-671-01	SPRING	
103	*4-383-047-01	COVER, REGISTRATION ADJUSTMENT	
104	1-518-590-11	LAMP, PILOT (WITH HOLDER)	
105	4-362-808-00	BUTTON, POWER	
106	*4-378-608-01	ACTUATOR	
107	*4-387-737-02	HOLDER, E PC BOARD	
108	*1-621-059-11	DB BOARD	
109	*A-1341-335-A	MOUNTED PCB, D	
110	*4-313-732-00	CLIP, HINGE, CIRCUIT BOARD	
111	4-389-025-01	SCREW (M4X8)(EXT TOOTH WASHER)	
112	*1-621-060-11	EC BOARD	
113	*1-621-055-11	EB BOARD	
114	*A-1340-922-A	MOUNTED PCB, E	
115	*1-621-062-21	HA BOARD	
116	*4-353-620-02	HINGE, PC BOARD	
117	*A-1130-546-A	MOUNTED PCB, BB	
118	*A-1135-520-A	COMPLETE PCB, BA	
119	⚠.1-552-437-11	SWITCH, LEVER	
120	*1-621-051-21	X BOARD	
121	*4-337-847-00	INSULATOR, SLIDE SWITCH	
122	*3-703-353-02	SUPPORT, PC BOARD	
123	⚠.1-541-449-11	FAN, DC (WITH SENSOR)	
124	⚠.1-237-582-11	RESISTOR ASSY, HIGH-VOLTAGE	
125	*4-383-037-01	COVER, FOCUS PACK	
126	9-911-840-XX	CUSHION	
127	*1-622-694-21	ED BOARD	
128	*3-703-141-00	HOLDER, PCB	
129	*A-1130-718-A	MOUNTED PCB, BC	
130	*X-4378-626-6	BRACKET ASSY, PC BOARD	
131	*4-032-125-01	COVER (B), FOCUS PACK	

8-4. BASE ASSY

▲: BVTP4×12 7-685-661-14
■: BVTP3×8 7-685-646-79

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.


162
166
158
157
152
155
151
▲
▲
■
177
160
159
163
PSW3×12
7-682-950-01
151
158
159
157
156
155
■
166
168
169
161
164
151
171
173
172
■
■
170
157
158
155
156
153
■
174
BVTP4×8
7-685-659-79
160
159
HEAD, WASHER,
TAPPING SCREW
7-685-167-19
165
154
156
151
▲
167
STOP RING 3.0
TYPE-E
7-624-106-04
175
176

REF.NO.	PART NO.	DESCRIPTION	REMARK
151	4-304-749-00	NUT, FLANGE	
152	⚠.8-733-023-05	PICTURE TUBE SD-187 (R)	
153	⚠.8-733-021-05	PICTURE TUBE SD-187 (G)	
154	⚠.8-733-022-05	PICTURE TUBE SD-187 (B)	
155	⚠.1-451-243-00	DEFLECTION YOKE (Y636PA)	
156	*1-621-053-21	DY BOARD	
157	⚠.1-452-302-11	PICTURE TUBE NECK ASSEMBLY	
158	X-4378-637-1	BAND ASSY	
159	⚠.1-452-443-13	NECK ASSY, PICTURE TUBE (NA367)	
160	4-378-603-01	SPACER (100"), PICTURE TUBE	
161	*4-383-025-01	SPACER (G), PICTURE TUBE	
162	*1-621-068-11	CR BOARD	
163	*1-621-069-11	CG BOARD	
164	*1-621-053-21	CB BOARD	
165	⚠.1-541-449-11	FAN, DC (WITH SENSOR)	
166	*3-701-903-00	HOLDER, PC BOARD	
167	⚠.1-453-108-11	DC BLOCK, HIGH-VOLTAGE	
168	⚠.1-439-408-31	TRANSFORMER ASSY, FLYBACK (NX-2023)	
169	*1-621-050-21	PC BOARD	
170	3-680-721-00	HOLDER, CHASSIS	
171	*1-621-052-21	Y BOARD	
172	*A-1190-113-A	MOUNTED PCB, PA	173
173	*1-621-054-11	PB BOARD	
174	*4-309-624-00	TERMINAL, EARTH	
175	X-4378-628-3	BASE ASSY	176
176	4-378-622-01	ADJUSTOR	
177	*3-680-613-01	SUPPORT, PC BOARD	

SECTION 9

ELECTRICAL PARTS LIST

BB

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

CAPACITORS

- MF : μF, PF : μμF

COILS

- MMH : mH, UH : μH

- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- The resistors of the reference number coded from 900 are used as jumper wires. Therefore, they are not mentioned on the schematic diagram.
- There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

REF.NO.	PART NO.	DESCRIPTION			REMARK
	*A-1130-546-A	BB BOARD, COMPLETE ******************			
	4-309-378-00	WASHER			
		<CONNECTOR>			
BB1	*1-566-058-11	PIN, CONNECTOR 6P			
BB2	*1-566-060-11	PIN, CONNECTOR 8P			
BB3	*1-566-056-11	PIN, CONNECTOR 4P			
BB4	*1-566-058-11	PIN, CONNECTOR 6P			
BB5	*1-566-059-11	PIN, CONNECTOR 7P			
BB6	*1-566-060-11	PIN, CONNECTOR 8P			
BB7	*1-566-057-11	PIN, CONNECTOR 5P			
BB8	*1-566-057-11	PIN, CONNECTOR 5P			
BB9	*1-566-057-11	PIN, CONNECTOR 5P			
		<CAPACITOR>			
C1	1-123-380-00	ELECT	1MF	20%	50V
C2	1-123-356-00	ELECT	10MF	20%	16V
C3	1-123-380-00	ELECT	1MF	20%	50V
C4	1-124-907-11	ELECT	10MF	20%	50V
C5	1-124-122-11	ELECT	100MF	20%	16V
C6	1-101-004-00	CERAMIC	0.01MF		50V
C7	1-136-153-00	FILM	0.01MF	5%	50V
C8	1-136-153-00	FILM	0.01MF	5%	50V
C9	1-136-153-00	FILM	0.01MF	5%	50V
C10	1-102-820-00	CERAMIC	330PF	5%	50V
C11	1-102-822-00	CERAMIC	390PF	5%	50V
C12	1-102-820-00	CERAMIC	330PF	5%	50V
C13	1-123-356-00	ELECT	10MF	20%	16V
C14	1-124-120-11	ELECT	220MF	20%	16V
C15	1-101-006-00	CERAMIC	0.047MF		50V
C16	1-123-379-00	ELECT	0.47MF	20%	50V
C17	1-123-379-00	ELECT	0.47MF	20%	50V
C18	1-102-824-00	CERAMIC	470PF	5%	50V
C19	1-101-361-00	CERAMIC	150PF	5%	50V
C20	1-101-361-00	CERAMIC	150PF	5%	50V
C21	1-123-356-00	ELECT	10MF	20%	16V
C22	1-101-361-00	CERAMIC	150PF	5%	50V
C23	1-123-380-00	ELECT	1MF	20%	50V
C24	1-123-380-00	ELECT	1MF	20%	50V
C25	1-123-330-00	ELECT	22MF	20%	16V
C26	1-123-380-00	ELECT	1MF	20%	50V
C27	1-136-165-00	FILM	0.1MF	5%	50V
C28	1-136-165-00	FILM	0.1MF	5%	50V
C29	1-136-165-00	FILM	0.1MF	5%	50V
C30	1-123-380-00	ELECT	1MF	20%	50V
C32	1-124-464-11	ELECT	0.22MF	20%	50V
C33	1-102-959-00	CERAMIC	22PF	5%	50V
C34	1-123-379-00	ELECT	0.47MF	20%	50V
C35	1-123-356-00	ELECT	10MF	20%	16V
C36	1-101-810-00	CERAMIC	100PF	5%	500V
C37	1-102-973-00	CERAMIC	100PF	5%	50V
C38	1-101-888-00	CERAMIC	68PF	5%	50V
C39	1-102-973-00	CERAMIC	100PF	5%	50V
C40	1-124-122-11	ELECT	100MF	20%	16V
C41	1-136-153-00	FILM	0.01MF	5%	50V
C42	1-123-356-00	ELECT	10MF	20%	16V
C43	1-101-880-00	CERAMIC	47PF	5%	50V
C44	1-123-380-00	ELECT	1MF	20%	50V
C45	1-123-356-00	ELECT	10MF	20%	16V
C46	1-123-356-00	ELECT	10MF	20%	16V
C47	1-123-356-00	ELECT	10MF	20%	16V
C48	1-123-356-00	ELECT	10MF	20%	16V
C49	1-124-910-11	ELECT	47MF	20%	16V
C50	1-101-006-00	CERAMIC	0.047MF		50V
C51	1-101-006-00	CERAMIC	0.047MF		50V
C52	1-101-006-00	CERAMIC	0.047MF		50V
C53	1-101-006-00	CERAMIC	0.047MF		50V
C54	1-101-006-00	CERAMIC	0.047MF		50V
C55	1-101-006-00	CERAMIC	0.047MF		50V
C56	1-101-006-00	CERAMIC	0.047MF		50V
C57	1-101-006-00	CERAMIC	0.047MF		50V
		<DIODE>			
D1	8-719-911-19	DIODE 1SS119			
D2	8-719-911-19	DIODE 1SS119			
D3	8-719-911-19	DIODE 1SS119			
D4	8-719-911-19	DIODE 1SS119			
D5	8-719-911-19	DIODE 1SS119			
D6	8-719-911-19	DIODE 1SS119			
D7	8-719-911-19	DIODE 1SS119			
D8	8-719-911-19	DIODE 1SS119			
D9	8-719-911-19	DIODE 1SS119			
D10	8-719-110-36	DIODE RD13ES-B2			
D11	8-719-911-19	DIODE 1SS119			
D12	8-719-911-19	DIODE 1SS119			
D13	8-719-911-19	DIODE 1SS119			
D14	8-719-911-19	DIODE 1SS119			
D15	8-719-911-19	DIODE 1SS119			
D16	8-719-911-19	DIODE 1SS119			
D17	8-719-911-19	DIODE 1SS119			
D18	8-719-911-19	DIODE 1SS119			
D19	8-719-911-19	DIODE 1SS119			
D20	8-719-911-19	DIODE 1SS119			
D21	8-719-911-19	DIODE 1SS119			
D22	8-719-911-19	DIODE 1SS119			
		<IC>			

BB

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1	8-759-604-39	IC M5F78M12L	
IC2	8-759-982-48	IC RC79L12A	
IC3	8-759-000-48	IC MC14052BCP	
IC4	8-759-000-48	IC MC14052BCP	
IC5	8-752-033-27	IC CXA1044AP	
IC6	8-759-000-51	IC MC14069UBCP	
IC7	8-759-240-71	IC TC4071BC	
IC8	8-759-945-58	IC RC4558P	
IC9	8-759-945-58	IC RC4558P	
IC10	8-759-945-58	IC RC4558P	
IC11	8-759-340-46	IC HD14046BP	
IC12	8-759-000-33	IC MC14024BCP	
IC13	8-759-340-46	IC HD14046BP	
IC14	8-759-240-40	IC TC4040B	
IC15	8-759-240-81	IC TC4081BP	
IC16	8-759-240-82	IC TC4082BP	
IC17	8-759-205-76	IC TC504013BP	
IC18	8-759-205-76	IC TC504013BP	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L1	1-410-494-11	INDUCTOR 1MMH	
L2	1-408-421-00	INDUCTOR 100UH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q2	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q3	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4	8-729-900-89	TRANSISTOR XDC144ES	
Q5	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q6	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q7	8-729-900-89	TRANSISTOR XDC144ES	
Q8	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q9	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q10	8-729-900-89	TRANSISTOR XDC144ES	
Q11	8-729-213-02	TRANSISTOR 2SC2230A-GR	
Q12	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q13	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q14	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q15	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q16	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q17	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q18	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q19	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q20	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q21	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q22	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q23	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q24	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q25	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q26	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q27	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q28	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q29	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q30	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q31	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q32	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q33	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q34	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q35	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q36	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q37	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q38	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q39	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q40	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q41	8-729-900-89	TRANSISTOR XDC144ES	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
R1	1-247-700-11	CARBON 100 5% 1/4W	
R2	1-247-700-11	CARBON 100 5% 1/4W	
R3	1-247-700-11	CARBON 100 5% 1/4W	
R4	1-249-405-11	CARBON 100 5% 1/4W	
R5	1-249-405-11	CARBON 100 5% 1/4W	
R6	1-249-405-11	CARBON 100 5% 1/4W	
R7	1-249-420-11	CARBON 1.8K 5% 1/4W	
R8	1-249-417-11	CARBON 1K 5% 1/4W	
R9	1-249-420-11	CARBON 1.8K 5% 1/4W	
R10	1-249-417-11	CARBON 1K 5% 1/4W	
R11	1-249-425-11	CARBON 4.7K 5% 1/4W	
R12	1-249-421-11	CARBON 2.2K 5% 1/4W	
R13	1-247-724-11	CARBON 8.2K 5% 1/4W	
R14	1-249-433-11	CARBON 22K 5% 1/4W	
R15	1-249-433-11	CARBON 22K 5% 1/4W	
R16	1-249-421-11	CARBON 2.2K 5% 1/4W	
R17	1-249-417-11	CARBON 1K 5% 1/4W	
R18	1-249-414-11	CARBON 560 5% 1/4W	
R19	1-249-405-11	CARBON 100 5% 1/4W	
R20	1-249-405-11	CARBON 100 5% 1/4W	
R21	1-249-405-11	CARBON 100 5% 1/4W	
R22	1-249-408-11	CARBON 180 5% 1/4W	
R23	1-249-408-11	CARBON 180 5% 1/4W	
R24	1-249-408-11	CARBON 180 5% 1/4W	
R25	1-215-425-00	METAL 1.5K 1% 1/4W	
R26	1-215-413-00	METAL 470 1% 1/4W	
R27	1-249-405-11	CARBON 100 5% 1/4W	
R28	1-249-401-11	CARBON 47 5% 1/4W	
R29	1-249-415-11	CARBON 680 5% 1/4W	
R32	1-215-425-00	METAL 1.5K 1% 1/4W	
R33	1-215-413-00	METAL 470 1% 1/4W	
R34	1-249-405-11	CARBON 100 5% 1/4W	
R35	1-247-696-11	CARBON 47 5% 1/4W	
R36	1-249-415-11	CARBON 680 5% 1/4W	
R37	1-249-410-11	CARBON 270 5% 1/4W	
R39	1-215-425-00	METAL 1.5K 1% 1/4W	
R40	1-215-413-00	METAL 470 1% 1/4W	
R41	1-249-405-11	CARBON 100 5% 1/4W	
R42	1-249-401-11	CARBON 47 5% 1/4W	
R45	1-249-409-11	CARBON 220 5% 1/4W	
R46	1-249-393-11	CARBON 10 5% 1/4W	
R47	1-249-422-11	CARBON 2.7K 5% 1/4W	
R48	1-247-818-11	CARBON 300 5% 1/4W	
R49	1-249-405-11	CARBON 100 5% 1/4W	
R50	1-247-700-11	CARBON 100 5% 1/4W	
R51	1-249-405-11	CARBON 100 5% 1/4W	
R52	1-247-700-11	CARBON 100 5% 1/4W	
R53	1-249-422-11	CARBON 2.7K 5% 1/4W	
R54	1-249-417-11	CARBON 1K 5% 1/4W	
R55	1-249-425-11	CARBON 4.7K 5% 1/4W	
R56	1-247-881-00	CARBON 120K 5% 1/4W	
R57	1-249-431-11	CARBON 15K 5% 1/4W	
R58	1-247-719-11	CARBON 3.3K 5% 1/4W	
R59	1-249-441-11	CARBON 100K 5% 1/4W	
R60	1-247-887-00	CARBON 220K 5% 1/4W	
R61	1-249-431-11	CARBON 15K 5% 1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R62	1-249-469-11	CARBON	100K	5%	1/4W	
R63	1-249-417-11	CARBON	1K	5%	1/4W	
R64	1-249-430-11	CARBON	12K	5%	1/4W	
R65	1-247-717-11	CARBON	2.2K	5%	1/4W	
R66	1-249-417-11	CARBON	1K	5%	1/4W	
R67	1-249-437-11	CARBON	47K	5%	1/4W	
R68	1-249-437-11	CARBON	47K	5%	1/4W	
R69	1-249-434-11	CARBON	27K	5%	1/4W	
R70	1-247-891-00	CARBON	330K	5%	1/4W	
R71	1-249-429-11	CARBON	10K	5%	1/4W	
R72	1-249-438-11	CARBON	56K	5%	1/4W	
R73	1-249-434-11	CARBON	27K	5%	1/4W	
R74	1-249-441-11	CARBON	100K	5%	1/4W	
R75	1-249-441-11	CARBON	100K	5%	1/4W	
R76	1-249-429-11	CARBON	10K	5%	1/4W	
R77	1-249-439-11	CARBON	68K	5%	1/4W	
R78	1-247-891-00	CARBON	330K	5%	1/4W	
R79	1-249-423-11	CARBON	3.3K	5%	1/4W	
R80	1-247-881-00	CARBON	120K	5%	1/4W	
R81	1-249-429-11	CARBON	10K	5%	1/4W	
R82	1-249-429-11	CARBON	10K	5%	1/4W	
R83	1-214-769-00	METAL	47K	1%	1/4W	
R84	1-215-469-00	METAL	100K	1%	1/4W	
R85	1-215-457-00	METAL	33K	1%	1/4W	
R86	1-215-469-00	METAL	100K	1%	1/4W	
R87	1-249-429-11	CARBON	10K	5%	1/4W	
R88	1-215-443-00	METAL	8.2K	1%	1/4W	
R89	1-215-443-00	METAL	8.2K	1%	1/4W	
R90	1-215-443-00	METAL	8.2K	1%	1/4W	
R91	1-247-887-00	CARBON	220K	5%	1/4W	
R92	1-247-887-00	CARBON	220K	5%	1/4W	
R93	1-247-887-00	CARBON	220K	5%	1/4W	
R94	1-249-441-11	CARBON	100K	5%	1/4W	
R95	1-249-469-11	CARBON	100K	5%	1/4W	
R96	1-249-429-11	CARBON	10K	5%	1/4W	
R97	1-247-889-00	CARBON	270K	5%	1/4W	
R98	1-249-429-11	CARBON	10K	5%	1/4W	
R99	1-215-431-00	METAL	2.7K	1%	1/4W	
R100	1-249-432-11	CARBON	18K	5%	1/4W	
R101	1-215-445-00	METAL	10K	1%	1/4W	
R102	1-215-439-00	METAL	5.6K	1%	1/4W	
R103	1-215-449-00	METAL	15K	1%	1/4W	
R104	1-249-423-11	CARBON	3.3K	5%	1/4W	
R105	1-247-700-11	CARBON	100	5%	1/4W	
R106	1-249-405-11	CARBON	100	5%	1/4W	
R107	1-215-461-00	METAL	47K	1%	1/4W	
R108	1-214-777-00	METAL	100K	1%	1/4W	
R109	1-215-461-00	METAL	47K	1%	1/4W	
R110	1-215-469-00	METAL	100K	1%	1/4W	
R111	1-215-461-00	METAL	47K	1%	1/4W	
R112	1-215-469-00	METAL	100K	1%	1/4W	
R113	1-249-439-11	CARBON	68K	5%	1/4W	
R114	1-249-439-11	CARBON	68K	5%	1/4W	
R115	1-249-437-11	CARBON	47K	5%	1/4W	
R116	1-215-429-00	METAL	2.2K	1%	1/4W	
R117	1-249-423-11	CARBON	3.3K	5%	1/4W	
R118	1-249-417-11	CARBON	1K	5%	1/4W	
R119	1-249-417-11	CARBON	1K	5%	1/4W	
R120	1-247-726-11	CARBON	33K	5%	1/4W	
R121	1-249-441-11	CARBON	100K	5%	1/4W	
R122	1-249-427-11	CARBON	6.8K	5%	1/4W	
R123	1-249-431-11	CARBON	15K	5%	1/4W	
R124	1-249-415-11	CARBON	680	5%	1/4W	
R125	1-249-441-11	CARBON	100K	5%	1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R126	1-249-429-11	CARBON	10K	5%	1/4W	
R127	1-249-417-11	CARBON	1K	5%	1/4W	
R128	1-249-421-11	CARBON	2.2K	5%	1/4W	
R129	1-249-421-11	CARBON	2.2K	5%	1/4W	
R130	1-249-421-11	CARBON	2.2K	5%	1/4W	
R131	1-249-421-11	CARBON	2.2K	5%	1/4W	
R132	1-249-421-11	CARBON	2.2K	5%	1/4W	
R133	1-249-425-11	CARBON	4.7K	5%	1/4W	
R134	1-249-425-11	CARBON	4.7K	5%	1/4W	
R135	1-249-425-11	CARBON	4.7K	5%	1/4W	
R136	1-249-423-11	CARBON	3.3K	5%	1/4W	
R137	1-249-430-11	CARBON	12K	5%	1/4W	
R138	1-249-434-11	CARBON	27K	5%	1/4W	
R139	1-247-713-11	CARBON	1K	5%	1/4W	
R140	1-249-421-11	CARBON	2.2K	5%	1/4W	
R141	1-249-421-11	CARBON	2.2K	5%	1/4W	
R142	1-247-706-11	CARBON	330	5%	1/4W	
R143	1-249-429-11	CARBON	10K	5%	1/4W	
R144	1-249-437-11	CARBON	47K	5%	1/4W	
R145	1-249-417-11	CARBON	1K	5%	1/4W	
R146	1-249-417-11	CARBON	1K	5%	1/4W	
R147	1-249-405-11	CARBON	100	5%	1/4W	
R148	1-249-431-11	CARBON	15K	5%	1/4W	
R149	1-249-429-11	CARBON	10K	5%	1/4W	
R150	1-249-425-11	CARBON	4.7K	5%	1/4W	
R151	1-249-428-11	CARBON	8.2K	5%	1/4W	
R153	1-249-429-11	CARBON	10K	5%	1/4W	
R154	1-247-885-00	CARBON	180K	5%	1/4W	
R155	1-249-437-11	CARBON	47K	5%	1/4W	
R156	1-249-435-11	CARBON	33K	5%	1/4W	
R157	1-249-433-11	CARBON	22K	5%	1/4W	
R158	1-249-435-11	CARBON	33K	5%	1/4W	
R159	1-249-399-11	CARBON	33	5%	1/4W	
R160	1-249-399-11	CARBON	33	5%	1/4W	
R161	1-249-399-11	CARBON	33	5%	1/4W	
R165	1-249-408-11	CARBON	180	5%	1/4W	
R166	1-249-409-11	CARBON	220	5%	1/4W	
R167	1-249-413-11	CARBON	470	5%	1/4W	
R168	1-249-408-11	CARBON	180	5%	1/4W	

<VARIABLE RESISTOR>

RV1	1-230-504-11	RES, ADJ, CARBON 220
RV2	1-230-504-11	RES, ADJ, CARBON 220
RV3	1-230-504-11	RES, ADJ, CARBON 220
RV4	1-228-997-00	RES, ADJ, CARBON 100K

<SWITCH>

S1	1-570-865-11	SWITCH, SLIDE

****

*A-1135-520-A	BA BOARD, COMPLETE (INCLUDING, BC BOARD)

****

*3-710-578-01	COVER, VOLUME, 6 MOLD

<CONNECTOR>

BA1	*1-566-056-11	PIN, CONNECTOR 4P
BA2	*1-566-056-11	PIN, CONNECTOR 4P
BA3	*1-566-057-11	PIN, CONNECTOR 5P
BA4	*1-566-060-11	PIN, CONNECTOR 8P

BA

REF.NO.	PART NO.	DESCRIPTION			REMARK
BA5	*1-566-059-11	PIN, CONNECTOR 7P			
BA6	*1-566-058-11	PIN, CONNECTOR 6P			

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION			REMARK
C108	1-123-356-00	ELECT	10MF	20%	16V
C119	1-163-090-00	CERAMIC CHIP	7PF	0.25PF	50V
C120	1-163-090-00	CERAMIC CHIP	7PF	0.25PF	50V
C121	1-163-090-00	CERAMIC CHIP	7PF	0.25PF	50V
C122	1-163-090-00	CERAMIC CHIP	7PF	0.25PF	50V
C123	1-123-380-00	ELECT	1MF	20%	50V
C124	1-123-356-00	ELECT	10MF	20%	16V
C127	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C128	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C129	1-123-379-00	ELECT	0.47MF	20%	50V
C130	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C131	1-136-165-00	FILM	0.1MF	5%	50V
C132	1-136-165-00	FILM	0.1MF	5%	50V
C133	1-124-477-11	ELECT	47MF	20%	16V
C134	1-163-090-00	CERAMIC CHIP	7PF	0.25PF	50V
C135	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C136	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C137	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C138	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C139	1-136-153-00	FILM	0.01MF	5%	50V
C140	1-135-153-21	TANTAL. CHIP	2.2MF	10%	20V
C141	1-136-165-00	FILM	0.1MF	5%	50V
C142	1-136-165-00	FILM	0.1MF	5%	50V
C143	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C144	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C145	1-163-083-00	CERAMIC CHIP	1PF	0.25PF	50V
C146	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C147	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C148	1-123-356-00	ELECT	10MF	20%	16V
C149	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C150	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C151	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C152	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C153	1-136-157-00	FILM	0.022MF	5%	50V
C155	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C156	1-123-356-00	ELECT	10MF	20%	16V
C157	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C160	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
C161	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C162	1-163-185-00	CERAMIC CHIP	150PF	5%	50V
C163	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C164	1-126-151-11	ELECT	4.7MF	20%	16V
C165	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C166	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C167	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C169	1-136-165-00	FILM	0.1MF	5%	50V
C170	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C172	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C173	1-136-165-00	FILM	0.1MF	5%	50V
C175	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C176	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C177	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C179	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C180	1-126-101-11	ELECT	100MF	20%	16V
C183	1-135-145-11	TANTAL. CHIP	0.47MF	10%	25V
C186	1-124-360-00	ELECT	1000MF	20%	16V
C188	1-123-356-00	ELECT	10MF	20%	16V
C189	1-123-379-00	ELECT	0.47MF	20%	50V
C195	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C200	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C201	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C202	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C203	1-126-151-11	ELECT	4.7MF	20%	16V
C204	1-135-153-21	TANTAL. CHIP	2.2MF	10%	20V
C205	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C206	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C207	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C208	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C209	1-163-183-00	CERAMIC CHIP	120PF	5%	50V
C210	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C211	1-136-153-00	FILM	0.01MF	5%	50V
C212	1-123-356-00	ELECT	10MF	20%	16V
C213	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C214	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C215	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C216	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C217	1-123-356-00	ELECT	10MF	20%	16V
C236	1-136-153-00	FILM	0.01MF	5%	50V
C237	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C238	1-124-477-11	ELECT	47MF	20%	16V
C244	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C245	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C247	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C248	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C401	1-124-903-11	ELECT	1MF	20%	50V
C402	1-123-356-00	ELECT	10MF	20%	16V
C403	1-124-480-11	ELECT	470MF	20%	25V
C404	1-123-356-00	ELECT	10MF	20%	16V
C405	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C406	1-123-356-00	ELECT	10MF	20%	16V
C407	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C408	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C409	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C410	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C411	1-124-477-11	ELECT	47MF	20%	16V
C412	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C413	1-124-477-11	ELECT	47MF	20%	16V
C414	1-123-356-00	ELECT	10MF	20%	16V
C415	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C416	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C417	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C418	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C419	1-126-101-11	ELECT	100MF	20%	16V
C420	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C421	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C422	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C423	1-135-091-00	TANTAL. CHIP	1MF	10%	16V
C424	1-136-160-00	FILM	0.039MF	5%	50V
C425	1-136-159-00	FILM	0.033MF	5%	50V
C426	1-123-356-00	ELECT	10MF	20%	16V
C427	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C428	1-163-090-00	CERAMIC CHIP	7PF	0.25PF	50V
C429	1-126-104-11	ELECT	470MF	20%	35V
C431	1-123-356-00	ELECT	10MF	20%	16V
C432	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C433	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C434	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C435	1-164-232-11	CERAMIC CHIP	0.01MF	5%	50V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION			REMARK
D101	8-719-104-34	DIODE 1S2836			

REF.NO.	PART NO.	DESCRIPTION	REMARK
D102	8-719-400-18	DIODE MA152WK	
D103	8-719-104-34	DIODE 1S2836	
D104	8-719-400-18	DIODE MA152WK	
D105	8-719-104-34	DIODE 1S2836	
D106	8-719-104-34	DIODE 1S2836	
D107	8-719-400-18	DIODE MA152WK	
D108	8-719-400-18	DIODE MA152WK	
D110	8-719-800-76	DIODE 1SS226	
D111	8-719-104-34	DIODE 1S2836	
D113	8-719-104-34	DIODE 1S2836	
D115	8-719-104-34	DIODE 1S2836	
D116	8-719-800-76	DIODE 1SS226	
D122	8-719-104-34	DIODE 1S2836	
D125	8-719-104-34	DIODE 1S2836	
D401	8-719-400-18	DIODE MA152WK	
D402	8-719-104-34	DIODE 1S2836	
D407	8-719-105-83	DIODE RD5.1M-B3	
D408	8-719-104-34	DIODE 1S2836	

<DELAY LINE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
DL103	1-415-122-31	DELAY LINE, 1H (PAL)	
DL401	1-415-494-11	DELAY LINE, Y	
DL402	1-415-356-11	DELAY LINE, 1H	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC101	8-752-006-12	IC CX20061	
IC102	8-752-006-12	IC CX20061	
IC103	8-759-113-65	IC UPC1365C	
IC104	8-759-000-33	IC MC14024BCP	
IC201	8-759-100-15	IC UPC1364C2	
IC401	8-759-604-39	IC M5F78M12L	
IC402	8-759-982-48	IC RC79L12A	
IC403	8-759-014-96	IC MC1496P	
IC404	8-759-979-16	IC CX-7916	
IC501	8-759-040-53	IC MC14053BCP	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L107	1-410-208-41	INDUCTOR CHIP 22UH	
L108	1-410-211-51	INDUCTOR CHIP 39UH	
L110	1-410-207-51	INDUCTOR CHIP 18UH	
L111	1-410-201-51	INDUCTOR CHIP 5.6UH	
L112	1-410-203-51	INDUCTOR CHIP 8.2UH	
L201	1-410-091-31	INDUCTOR 22MMH	
L202	1-410-068-11	INDUCTOR 5.6MMH	
L203	1-410-209-51	INDUCTOR CHIP 27UH	
L401	1-410-192-51	INDUCTOR CHIP 1UH	
L402	1-410-211-51	INDUCTOR CHIP 39UH	
L403	1-410-212-51	INDUCTOR CHIP 47UH	
L404	1-410-206-51	INDUCTOR CHIP 15UH	
L405	1-410-204-31	INDUCTOR CHIP 10UH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q116	8-729-216-22	TRANSISTOR 2SA1162-G	
Q117	8-729-901-03	TRANSISTOR DTC144WK	
Q118	8-729-901-03	TRANSISTOR DTC144WK	
Q120	8-729-901-03	TRANSISTOR DTC144WK	
Q121	8-729-216-22	TRANSISTOR 2SA1162-G	
Q122	8-729-901-03	TRANSISTOR DTC144WK	
Q123	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q124	8-729-115-30	TRANSISTOR 2SK105A-20	
Q125	8-729-901-03	TRANSISTOR DTC144WK	
Q126	8-729-116-05	TRANSISTOR 2SK160-K5	
Q127	8-729-116-05	TRANSISTOR 2SK160-K5	
Q128	8-729-116-05	TRANSISTOR 2SK160-K5	
Q129	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q130	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q131	8-729-116-05	TRANSISTOR 2SK160-K5	
Q132	8-729-116-05	TRANSISTOR 2SK160-K5	
Q135	8-729-216-22	TRANSISTOR 2SA1162-G	
Q136	8-729-216-22	TRANSISTOR 2SA1162-G	
Q137	8-729-216-22	TRANSISTOR 2SA1162-G	
Q138	8-729-216-22	TRANSISTOR 2SA1162-G	
Q139	8-729-901-03	TRANSISTOR DTC144WK	
Q144	8-729-901-03	TRANSISTOR DTC144WK	
Q145	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q149	8-729-216-22	TRANSISTOR 2SA1162-G	
Q150	8-729-216-22	TRANSISTOR 2SA1162-G	
Q152	8-729-901-03	TRANSISTOR DTC144WK	
Q153	8-729-901-03	TRANSISTOR DTC144WK	
Q154	8-729-901-03	TRANSISTOR DTC144WK	
Q401	8-729-216-22	TRANSISTOR 2SA1162-G	
Q402	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q403	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q404	8-729-216-22	TRANSISTOR 2SA1162-G	
Q405	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q406	8-729-216-22	TRANSISTOR 2SA1162-G	
Q407	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q408	8-729-216-22	TRANSISTOR 2SA1162-G	
Q409	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q410	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q411	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q412	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q413	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q414	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q415	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q416	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q417	8-729-901-03	TRANSISTOR DTC144WK	
Q418	8-729-901-03	TRANSISTOR DTC144WK	
Q419	8-729-901-03	TRANSISTOR DTC144WK	
Q420	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q421	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q422	8-729-901-03	TRANSISTOR DTC144WK	
Q423	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q424	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q425	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q426	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q427	8-729-901-03	TRANSISTOR DTC144WK	
Q431	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q432	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q433	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q434	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q435	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q436	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q437	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q438	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q439	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q440	8-729-901-03	TRANSISTOR DTC144WK	
Q441	8-729-901-03	TRANSISTOR DTC144WK	
Q442	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q443	8-729-100-66	TRANSISTOR 2SC1623-L6	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
R056	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	

BA

REF.NO.	PART NO.	DESCRIPTION				REMARK
R066	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R140	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R141	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R150	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R151	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R152	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R153	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R156	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R157	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R159	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R160	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R165	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R167	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R168	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R173	1-216-214-00	METAL GLAZE	4.7K	5%	1/8W	
R176	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R177	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R178	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R180	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R181	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R182	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R183	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R184	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R185	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R186	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R187	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R188	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R189	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R190	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R192	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R193	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R194	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R195	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R196	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R197	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R198	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R199	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R200	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R201	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R202	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R204	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R207	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R208	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R210	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R211	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R212	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R213	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R214	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R215	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R216	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R217	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R218	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R219	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R220	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R221	1-216-088-00	METAL GLAZE	43K	5%	1/10W	
R222	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R223	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R230	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R231	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R232	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R233	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R234	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R235	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R236	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R237	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R238	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R240	1-216-056-00	METAL GLAZE	2K	5%	1/10W	
R241	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R242	1-216-072-00	METAL GLAZE	9.1K	5%	1/10W	
R245	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R246	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R247	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R249	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R250	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R251	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R252	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R253	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R254	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R255	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R256	1-216-220-00	METAL GLAZE	8.2K	5%	1/8W	
R258	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R259	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R262	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R270	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R271	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R273	1-202-723-00	SOLID	2.2M	10%	1/2W	
R274	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R275	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R276	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R277	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R278	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R279	1-216-084-00	METAL GLAZE	30K	5%	1/10W	
R280	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R281	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R282	1-249-421-11	CARBON	2.2K	5%	1/8W F	
R283	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R284	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R285	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R286	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R287	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R288	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R290	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R291	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R296	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R307	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R308	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R311	1-216-090-00	METAL GLAZE	51K	5%	1/10W	
R313	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R315	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R316	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R317	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R318	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R326	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R332	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R348	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R401	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R402	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R403	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R404	1-216-046-00	METAL GLAZE	750	5%	1/10W	
R405	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R406	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R407	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R408	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R409	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R410	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R411	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R412	1-216-037-00	METAL GLAZE	330	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R413	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R414	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R415	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R416	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R417	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R418	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R419	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R420	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R421	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R423	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R424	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R425	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R426	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R427	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R428	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R429	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R430	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R431	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R432	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R433	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R434	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R435	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R436	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R437	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R438	1-216-196-00	METAL GLAZE	820	5%	1/8W	
R439	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R440	1-216-234-00	METAL GLAZE	33K	5%	1/8W	
R441	1-216-232-00	METAL GLAZE	27K	5%	1/8W	
R442	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R443	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R444	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R445	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R446	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R447	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R448	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R449	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R450	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R451	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R452	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R453	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R454	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R455	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R456	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R457	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R458	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R459	1-216-640-11	METAL CHIP	360	0.50%	1/10W	
R461	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R462	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R463	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R464	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R465	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R466	1-247-725-11	CARBON	10K	5%	1/4W	
R467	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R468	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R469	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R470	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R471	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R472	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R473	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R479	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R480	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R481	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R482	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R483	1-216-025-00	METAL GLAZE	100	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R484	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R485	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R486	1-216-200-00	METAL GLAZE	1.2K	5%	1/8W	
R487	1-216-200-00	METAL GLAZE	1.2K	5%	1/8W	
R488	1-216-200-00	METAL GLAZE	1.2K	5%	1/8W	
R489	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R490	1-216-200-00	METAL GLAZE	1.2K	5%	1/8W	
R491	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R492	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R493	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R494	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R495	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R498	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R499	1-216-200-00	METAL GLAZE	1.2K	5%	1/8W	
R500	1-216-200-00	METAL GLAZE	1.2K	5%	1/8W	
R501	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R502	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R503	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R504	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R505	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R506	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R667	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R668	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R669	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R670	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R671	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R672	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R673	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R674	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R675	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R676	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R678	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R679	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R680	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R681	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R682	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R683	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R684	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R685	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R686	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R687	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R688	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R689	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R690	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R691	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R692	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R693	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R694	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R695	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R696	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R697	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R698	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R699	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R700	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R702	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R703	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R704	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R705	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R706	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R707	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R708	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R709	1-249-401-11	CARBON	47	5%	1/4W	
R900	1-216-296-00	METAL GLAZE	0	5%	1/8W	

BA

REF.NO.	PART NO.	DESCRIPTION				REMARK
R901	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R902	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R903	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R904	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R905	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R906	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R907	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R908	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R909	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R910	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R911	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R912	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R913	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R914	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R915	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R916	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R917	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R918	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R919	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R920	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R921	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R922	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R923	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R924	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R925	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R926	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R927	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R928	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R929	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R930	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R931	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R932	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R933	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R934	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R935	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R936	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R937	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R938	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R939	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R940	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R941	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R942	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R943	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R944	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R945	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R946	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R947	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R948	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R949	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R950	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R951	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R952	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R953	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R954	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R955	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R956	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R957	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R958	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R959	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R960	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R961	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R962	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R963	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R964	1-216-296-00	METAL GLAZE	0	5%	1/8W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R965	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R966	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R967	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R968	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R969	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R970	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R971	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R972	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R973	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R974	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R975	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R976	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R977	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R978	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R979	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R980	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R981	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R982	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R983	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R984	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R985	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R986	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R987	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R988	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R989	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R990	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R991	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R992	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R993	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R994	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R995	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R996	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R997	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R998	1-216-295-00	METAL GLAZE	0	5%	1/10W	

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION		REMARK
RV103	1-228-993-00	RES, ADJ, CARBON	4.7K	
RV104	1-228-995-00	RES, ADJ, CARBON	22K	
RV105	1-228-995-00	RES, ADJ, CARBON	22K	
RV106	1-228-993-00	RES, ADJ, CARBON	4.7K	
RV107	1-228-994-00	RES, ADJ, CARBON	10K	
RV108	1-228-993-00	RES, ADJ, CARBON	4.7K	
RV110	1-228-989-00	RES, ADJ, CARBON	470	
RV111	1-228-996-00	RES, ADJ, CARBON	47K	
RV403	1-228-990-00	RES, ADJ, CARBON	1K	
RV404	1-228-993-00	RES, ADJ, CARBON	4.7K	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
T102	1-404-495-00	COIL	
T103	1-404-495-00	COIL	
T104	1-404-524-11	DAT	
T201	1-404-584-11	COIL	
T202	1-408-532-00	COIL, VARIABLE	
T203	1-408-532-00	COIL, VARIABLE	
T204	1-408-513-00	COIL (VARIABLE)	
T401	1-404-540-11	COIL	

<THERMISTER>

REF.NO.	PART NO.	DESCRIPTION	REMARK
TH101	1-800-071-XX	THERMISTER THO.35K	
TH201	1-800-069-XX	THERMISTOR	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

BA **BC** **PA**

<CRYSTAL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
X101	1-567-505-11	OSCILLATOR, CRYSTAL	
X102	1-567-504-11	OSCILLATOR, CRYSTAL	

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*A-1130-718-A BC BOARD, COMPLETE
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<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
C500	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C501	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C502	1-163-129-00	CERAMIC CHIP 330PF 5%	50V
C503	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C504	1-163-989-11	CERAMIC CHIP 0.033MF 10%	25V
C505	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C506	1-163-127-00	CERAMIC CHIP 270PF 5%	50V
C507	1-135-091-00	TANTAL. CHIP 1MF 10%	16V
C508	1-135-091-00	TANTAL. CHIP 1MF 10%	16V
C509	1-163-109-00	CERAMIC CHIP 47PF 5%	50V
C510	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C511	1-163-117-00	CERAMIC CHIP 100PF 5%	50V

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D450	8-719-400-18	DIODE MA152WK	
D451	8-719-400-18	DIODE MA152WK	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC500	8-759-987-16	IC LM393P	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L800	1-410-209-51	INDUCTOR CHIP 27UH	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q500	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q501	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q502	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q503	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q504	8-729-116-05	TRANSISTOR 2SK160-K5	
Q505	8-729-216-22	TRANSISTOR 2SA1162-G	
Q506	8-729-100-66	TRANSISTOR 2SC1623-L6	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
R800	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R801	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R802	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R803	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R804	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R805	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R806	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R808	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R809	1-216-689-11	METAL CHIP 39K 0.50% 1/10W	
R810	1-216-653-11	METAL CHIP 1.2K 0.50% 1/10W	
R811	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R812	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R813	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R814	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R815	1-216-119-00	METAL GLAZE 820K 5% 1/10W	
R816	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R817	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R818	1-216-119-00	METAL GLAZE 820K 5% 1/10W	
R819	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R820	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R821	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R822	1-216-017-00	METAL GLAZE 47 5% 1/10W	
R823	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R824	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R825	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R826	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R827	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R828	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R900	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R901	1-216-295-00	METAL GLAZE 0 5% 1/10W	

<PLUG>

REF.NO.	PART NO.	DESCRIPTION	REMARK
W1	*1-506-603-11	PLUG, L TYPE (2.0MM PITCH) 10P	

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*A-1190-113-A PA BOARD, COMPLETE
(INCLUDING, PB BOARD)
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REF.NO.	PART NO.	DESCRIPTION	REMARK
	*4-363-146-00	HEAT SINK, V.OUT	
	4-383-022-01	SPACER, MICA	
	4-383-023-01	SPACER, MICA	

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
C1	1-124-046-00	ELECT 10MF 20%	160V
C2	1-123-024-21	ELECT 33MF	160V
C3	1-136-134-00	FILM 1.5MF 5%	400V
C4	1-108-700-11	MYLAR 0.047MF 10%	200V
C5	1-102-030-00	CERAMIC 330PF 10%	500V
C6	1-123-356-00	ELECT 10MF 20%	25V
C7	1-124-122-11	ELECT 100MF 20%	16V
C9	1-123-379-00	ELECT 0.47MF 20%	50V
C10	1-102-973-00	CERAMIC 100PF 5%	50V
C11	1-102-244-00	CERAMIC 220PF 10%	500V
C12	1-108-704-11	MYLAR 0.1MF 10%	200V
C13	1-123-379-00	ELECT 0.47MF 20%	50V
C14	1-102-973-00	CERAMIC 100PF 5%	50V
C15	1-102-244-00	CERAMIC 220PF 10%	500V
C16	1-108-704-11	MYLAR 0.1MF 10%	200V
C17	1-123-380-00	ELECT 1MF 20%	50V
C18	1-123-380-00	ELECT 1MF 20%	50V
C19	1-162-134-11	CERAMIC 470PF 10%	2KV
C20	1-126-150-11	ELECT 47MF 20%	350V
C22	1-108-638-11	MYLAR 0.1MF 10%	100V
C23	1-123-356-00	ELECT 10MF 20%	25V
C24	1-123-356-00	ELECT 10MF 20%	25V
C25	1-124-034-51	ELECT 33MF 20%	16V
C26	1-123-356-00	ELECT 10MF 20%	16V
C27	1-123-356-00	ELECT 10MF 20%	16V
C28	1-124-034-51	ELECT 33MF 20%	16V
C29	1-124-034-51	ELECT 33MF 20%	16V
C30	1-136-169-00	FILM 0.22MF 5%	50V
C31	1-123-356-00	ELECT 10MF 20%	16V
C32	1-124-034-51	ELECT 33MF 20%	16V
C33	1-123-356-00	ELECT 10MF 20%	16V
C34	⚠ 1-123-320-91	ELECT 100MF 20%	16V
C36	1-108-692-11	MYLAR 0.01MF 10%	200V

PA

REF.NO.	PART NO.	DESCRIPTION			REMARK
C37	1-123-356-00	ELECT	10MF	20%	16V
C39	1-102-824-00	CERAMIC	470PF	5%	50V
C40	1-108-698-11	MYLAR	0.033MF	10%	200V
C41	1-108-698-11	MYLAR	0.033MF	10%	200V
C42	1-124-120-11	ELECT	220MF	20%	16V
C43	1-124-120-11	ELECT	220MF	20%	16V
C44	1-126-234-11	ELECT	2200MF	20%	16V
C45	1-126-234-11	ELECT	2200MF	20%	16V
C46	1-123-932-00	ELECT	4.7MF	20%	160V
C47	1-123-369-00	ELECT	4.7MF	20%	25V
C48	1-123-369-00	ELECT	4.7MF	20%	25V
C49	1-101-006-00	CERAMIC	0.047MF		50V
C50	1-101-006-00	CERAMIC	0.047MF		50V
C51	1-123-024-21	ELECT	33MF		160V
C52	1-108-704-11	MYLAR	0.1MF	10%	200V
C53	1-162-134-11	CERAMIC	470PF	10%	2KV
C54	1-124-798-11	ELECT	1MF	20%	160V
C55	1-126-541-11	ELECT	330MF	20%	16V
C56	1-136-165-00	FILM	0.1MF	5%	50V
C57	1-136-165-00	FILM	0.1MF	5%	50V
C58	1-123-380-00	ELECT	1MF	20%	50V
C59	1-126-174-51	ELECT	10MF	20%	350V
		<DIODE>			
D1	8-719-928-08	DIODE ERD28-08S			
D2	8-719-300-80	DIODE RU-1C			
D3	8-719-300-80	DIODE RU-1C			
D4	8-719-300-80	DIODE RU-1C			
D7	8-719-901-19	DIODE V11N			
D8	8-719-971-20	DIODE ERC38-06			
D9	8-719-971-20	DIODE ERC38-06			
D10	8-719-971-20	DIODE ERC38-06			
D11	8-719-971-20	DIODE ERC38-06			
D12	8-719-971-20	DIODE ERC38-06			
D13	8-719-971-20	DIODE ERC38-06			
D14	8-719-305-15	DIODE GH-3F			
D15	8-719-109-85	DIODE RD5.1ES-B2			
D16	8-719-109-85	DIODE RD5.1ES-B2			
D17	8-719-109-85	DIODE RD5.1ES-B2			
D18	8-719-109-85	DIODE RD5.1ES-B2			
D20	8-719-911-19	DIODE 1SS119			
D21	8-719-911-19	DIODE 1SS119			
D22	8-719-911-19	DIODE 1SS119			
D23	8-719-911-19	DIODE 1SS119			
D24	8-719-911-19	DIODE 1SS119			
D25	8-719-911-19	DIODE 1SS119			
D26	8-719-911-19	DIODE 1SS119			
D28	8-719-911-19	DIODE 1SS119			
D29	8-719-911-19	DIODE 1SS119			
D30	8-719-911-19	DIODE 1SS119			
D31	8-719-911-19	DIODE 1SS119			
D32	8-719-911-19	DIODE 1SS119			
D33	8-719-110-36	DIODE RD13ES-B2			
		<IC>			
IC1	8-759-990-82	IC TL082CP			
IC2	8-759-987-16	IC LM393P			
IC3	8-759-987-16	IC LM393P			
IC4	8-759-634-50	IC M5218AL			
IC5	8-759-982-26	IC RC78L12A			
		<COIL>			

REF.NO.	PART NO.	DESCRIPTION				REMARK
L1	1-459-614-11	COIL, CHOKE 90UH				
L2	1-459-700-11	COIL, CHOKE 2.1MMH				
L3	1-459-155-00	COIL (WITH CORE) 45UH				
		<NEON LAMP>				
NL2	1-519-108-XX	LAMP, NEON				
		<CONNECTOR>				
PA1	*1-566-058-11	PIN, CONNECTOR 6P				
PA2	*1-566-062-11	PIN, CONNECTOR 10P				
PA3	*1-508-768-00	PIN, CPNNECTOR (5MM PITCH) 6P				
PA4	*1-566-056-11	PIN, CONNECTOR 4P				
PA5	*1-566-057-11	PIN, CONNECTOR 5P				
PA6	*1-566-054-11	PIN, CONNECTOR 2P				
PA7	*1-566-055-11	PIN, CONNECTOR 3P				
PA8	*1-566-059-11	PIN, CONNECTOR 7P				
PA9	*1-566-058-11	PIN, CONNECTOR 6P				
PA10	*1-566-058-11	PIN, CONNECTOR 6P				
PA11	*1-566-058-11	PIN, CONNECTOR 6P				
PA12	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P				
PA13	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P				
PA14	*1-508-766-00	PIN, CONNECTOR (5MM PITCH) 4P				
PA15	*1-566-054-11	PIN, CONNECTOR 2P				
		<TRANSISTOR>				
Q1	8-729-201-62	TRANSISTOR 2SC2555-2				
Q2	8-729-119-80	TRANSISTOR 2SC2688-LK				
Q3	8-729-119-80	TRANSISTOR 2SC2688-LK				
Q4	8-729-119-80	TRANSISTOR 2SC2688-LK				
Q5	8-729-802-71	TRANSISTOR 2SA1407-D				
Q6	8-729-800-80	TRANSISTOR 2SD1399-CA				
Q7	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q8	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q9	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q10	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q11	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q12	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q13	8-729-804-48	TRANSISTOR 2SC3675				
Q14	8-729-119-76	TRANSISTOR 2SA1175-HFE				
		<RESISTOR>				
R1	1-216-378-11	METAL OXIDE	5.6	5%	2W	F
R2	1-216-488-11	METAL OXIDE	18K	5%	3W	F
R3	1-249-429-11	CARBON	10K	5%	1/4W	
R4	1-215-921-11	METAL OXIDE	4.7K	5%	3W	F
R5	1-215-921-11	METAL OXIDE	4.7K	5%	3W	F
R6	1-215-924-00	METAL OXIDE	15K	5%	3W	F
R7	1-249-417-11	CARBON	1K	5%	1/4W	
R9	1-249-417-11	CARBON	1K	5%	1/4W	
R10	1-249-423-11	CARBON	3.3K	5%	1/4W	
R11	1-249-420-11	CARBON	1.8K	5%	1/4W	F
R12	1-249-421-11	CARBON	2.2K	5%	1/4W	
R13	1-249-420-11	CARBON	1.8K	5%	1/4W	F
R15	1-249-441-11	CARBON	100K	5%	1/4W	
R16	1-249-441-11	CARBON	100K	5%	1/4W	
R17	1-216-359-00	METAL OXIDE	6.8	5%	1W	F
R18	1-215-443-00	METAL	8.2K	1%	1/4W	
R19	1-215-443-00	METAL	8.2K	1%	1/4W	
R20	1-215-441-00	METAL	6.8K	1%	1/4W	
R21	1-215-441-00	METAL	6.8K	1%	1/4W	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

- The components identified by ☒ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R22	1-214-747-00	METAL	5.6K	1%	1/4W	
☒R23	⚠.	METAL			1/4W	
R24	1-214-777-00	METAL	100K	1%	1/4W	
R25	1-215-471-00	METAL	120K	1%	1/4W	
R26	1-215-471-00	METAL	120K	1%	1/4W	
R27	1-215-453-00	METAL	22K	1%	1/4W	
R28	1-249-423-11	CARBON	3.3K	5%	1/4W	
R29	1-249-433-11	CARBON	22K	5%	1/4W	
R30	1-249-429-11	CARBON	10K	5%	1/4W	
R31	1-215-469-00	METAL	100K	1%	1/4W	
R32	1-249-423-11	CARBON	3.3K	5%	1/4W	
R33	1-215-429-00	METAL	2.2K	1%	1/4W	
R34	1-215-435-00	METAL	3.9K	1%	1/4W	
R35	1-249-423-11	CARBON	3.3K	5%	1/4W	
R36	1-249-417-11	CARBON	1K	5%	1/4W	
R37	1-247-883-00	CARBON	150K	5%	1/4W	
☒R38	⚠.	CARBON			1/4W	
☒R39	⚠.	CARBON			1/4W	
R40	1-249-433-11	CARBON	22K	5%	1/4W	
R41	1-249-435-11	CARBON	33K	5%	1/4W	
R42	1-249-438-11	CARBON	56K	5%	1/4W	
R43	1-249-434-11	CARBON	27K	5%	1/4W	
R44	1-249-429-11	CARBON	10K	5%	1/4W	
R45	1-249-423-11	CARBON	3.3K	5%	1/4W	
R46	1-215-453-00	METAL	22K	1%	1/4W	
R47	1-215-455-00	METAL	27K	1%	1/4W	
☒R48	⚠.	CARBON			1/4W	
☒R49	⚠.	CARBON			1/4W	
R50	1-215-469-00	METAL	100K	1%	1/4W	
R51	1-215-469-00	METAL	100K	1%	1/4W	
R52	1-249-430-11	CARBON	12K	5%	1/4W	
R53	1-249-433-11	CARBON	22K	5%	1/4W	
R54	1-249-433-11	CARBON	22K	5%	1/4W	
R55	1-249-430-11	CARBON	12K	5%	1/4W	
R56	1-249-419-11	CARBON	1.5K	5%	1/4W	
R57	1-249-377-11	CARBON	0.47	5%	1/4W	F
R58	1-214-929-00	CARBON	470K	5%	1/2W	
R59	1-207-621-00	WIREWOUND	1.5	10%	2W	F
R60	1-215-477-00	METAL	220K	1%	1/4W	
R61	1-215-457-00	METAL	33K	1%	1/4W	
R62	1-249-435-11	CARBON	33K	5%	1/4W	
R63	1-247-903-00	CARBON	1M	5%	1/4W	
R64	1-249-439-11	CARBON	68K	5%	1/4W	
R65	1-249-429-11	CARBON	10K	5%	1/4W	
R66	1-249-405-11	CARBON	100	5%	1/4W	
R67	1-215-453-00	METAL	22K	1%	1/4W	
R68	1-249-440-11	CARBON	82K	5%	1/4W	
R69	1-249-429-11	CARBON	10K	5%	1/4W	
R70	1-249-435-11	CARBON	33K	5%	1/4W	
R71	1-249-435-11	CARBON	33K	5%	1/4W	
R72	1-215-921-11	METAL OXIDE	4.7K	5%	3W	F
R73	1-247-881-00	CARBON	120K	5%	1/4W	
R74	1-249-429-11	CARBON	10K	5%	1/4W	
R75	1-202-730-00	SOLID	8.2M	10%	1/2W	
R76	1-216-488-11	METAL OXIDE	18K	5%	3W	F
R77	1-249-417-11	CARBON	1K	5%	1/4W	
R78	1-249-433-11	CARBON	22K	5%	1/4W	F
R79	1-215-483-00	METAL	390K	1%	1/4W	
R80	1-249-423-11	CARBON	3.3K	5%	1/4W	
R81	1-202-830-00	SOLID	10K	5%	1/2W	
R82	1-249-423-11	CARBON	3.3K	5%	1/4W	
R83	1-249-425-11	CARBON	4.7K	5%	1/4W	
R84	1-249-417-11	CARBON	1K	5%	1/4W	
R85	1-215-469-00	METAL	100K	1%	1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R86	1-215-469-00	METAL	100K	1%	1/4W	
R87	1-215-453-00	METAL	22K	1%	1/4W	
☒R88	⚠.	CARBON			1/4W	
☒R89	⚠.	CARBON			1/4W	
R90	1-249-417-11	CARBON	1K	5%	1/4W	
R91	1-249-429-11	CARBON	10K	5%	1/4W	
R92	1-249-429-11	CARBON	10K	5%	1/4W	

<SPARK GAP>

SG1	1-519-063-XX	DISCHARGING GAP

<TRANSFORMER>

T1	1-437-078-00	TRANSFORMER, HORIZONTAL DRIVE
T2	1-437-090-00	HDT
T3	⚠.1-437-078-11	TRANSFORMER, HORIZONTAL DRIVE
T4	⚠.1-439-409-11	LOT
T5	⚠.1-413-059-11	TRANSFORMER, FERRITE (DFT)

****

*1-621-054-11 PB BOARD
****

<CAPACITOR>

C1	1-124-257-00	ELECT	2.2MF	20%	50V
C2	1-126-163-11	ELECT	4.7MF	20%	25V
C3	1-136-159-00	FILM	0.033MF	5%	50V
C5	1-102-106-00	CERAMIC	100PF	10%	50V
C6	1-130-475-00	MYLAR	0.0022MF	5%	50V
C7	1-126-157-11	ELECT	10MF	20%	16V
C8	1-136-169-00	FILM	0.22MF	5%	50V
C9	1-130-475-00	MYLAR	0.0022MF	5%	50V

<IC>

IC1	8-759-100-75	IC UPC1394C

<RESISTOR>

R2	1-249-417-11	CARBON	1K	5%	1/4W
R3	1-249-434-11	CARBON	27K	5%	1/4W
R4	1-249-431-11	CARBON	15K	5%	1/4W
R5	1-249-441-11	CARBON	100K	5%	1/4W
R6	1-249-435-11	CARBON	33K	5%	1/4W
R7	1-249-429-11	CARBON	10K	5%	1/4W
R8	1-249-413-11	CARBON	470	5%	1/4W
R9	1-249-428-11	CARBON	8.2K	5%	1/4W
R10	1-249-437-11	CARBON	47K	5%	1/4W
R11	1-249-440-11	CARBON	82K	5%	1/4W
R12	1-249-436-11	CARBON	39K	5%	1/4W
R14	1-249-428-11	CARBON	8.2K	5%	1/4W

<PLUG>

W1	*1-506-602-11	PLUG, L TYPE (2.0MM PITCH) 5P
W2	*1-506-602-11	PLUG, L TYPE (2.0MM PITCH) 5P

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*1-621-050-21 PC BOARD
****

*4-341-751-01 EYELET

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*4-341-752-01	EYELET	
	4-382-854-11	SCREW (M3X10), P, SW (+)	

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
C1	⚠.1-130-660-11	FILM 0.02MF 3% 1.6KV	
C2	⚠.1-136-134-11	FILM 1.5MF 5% 400V	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1	8-719-945-80	DIODE ERC06-15S	
D2	8-719-945-80	DIODE ERC06-15S	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L1	⚠.1-459-700-11	COIL, CHOKE 2.1MMH	
L2	⚠.1-459-700-11	COIL, CHOKE 2.1MMH	

<NEON LAMP>

REF.NO.	PART NO.	DESCRIPTION	REMARK
NL1	1-519-108-XX	LAMP, NEON	

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
PC1	*1-508-768-00	PIN, CONNECTOR (5MM PITCH) 6P	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1	8-729-805-07	TRANSISTOR 2SD1887-CA	

<TRANSFORMER>

REF.NO.	PART NO.	DESCRIPTION	REMARK
T1	⚠.1-439-408-31	TRANSFORMER ASSY, FLYBACK (NX-2023)	
T2	⚠.1-439-408-31	TRANSFORMER ASSY, FLYBACK (NX-2023)	

****

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*1-621-056-11	FA BOARD ********	
	*4-341-751-01	EYELET EY7-EY12,EY17-EY36	
	*4-341-752-01	EYELET EY1-EY6,EY13-EY16	

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
C1	1-130-711-00	FILM 0.22MF 20% 250V	
C2	1-130-711-00	FILM 0.22MF 20% 250V	
C3	1-130-711-00	FILM 0.22MF 20% 250V	
C4	1-162-599-12	CERAMIC 0.0047MF 20% 400V	
C5	1-162-599-12	CERAMIC 0.0047MF 20% 400V	
C6	1-161-742-00	CERAMIC 0.0022MF 20% 400V	
C7	1-161-742-00	CERAMIC 0.0022MF 20% 400V	
C8	1-125-469-11	ELECT(BLOCK) 820MF 20% 200V	
C9	1-125-469-11	ELECT(BLOCK) 820MF 20% 200V	
C10	1-101-003-00	CERAMIC 0.0047MF 50V	
C11	1-101-003-00	CERAMIC 0.0047MF 50V	
C12	1-124-912-11	ELECT 330MF 20% 50V	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1	8-719-503-06	DIODE S3WB60Z	
D2	8-719-511-40	DIODE S1VB40	
D3	8-719-931-33	DIODE EQB01-33	

<CONNCTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
FA1	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
FA2	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
FA3	*1-566-055-11	PIN, CONNECTOR 3P	
FA4	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	

<COIL>

REF.NO.	PART NO.	DESCRIPTION	REMARK
L1	1-459-595-11	COIL, CHOKE	
L2	1-459-595-11	COIL, CHOKE	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
R1	1-202-723-00	SOLID 2.2M 10% 1/2W	
R2	⚠.1-205-798-11	WIREWOUND 1.5 5% 20W	
R3	1-214-921-00	CARBON 220K 5% 1/2W	
R4	1-214-921-00	CARBON 220K 5% 1/2W	
R5	1-249-405-11	CARBON 100 5% 1/4W	

<SWITCH>

REF.NO.	PART NO.	DESCRIPTION	REMARK
SW1	⚠.1-570-971-11	SWITCH, SLIDE	

<TRANSFORMER>

REF.NO.	PART NO.	DESCRIPTION	REMARK
T1	1-421-944-11	TRANSFORMER, LINE FILTER	
T2	⚠.1-448-374-11	TRANSFORMER, POWER	
T3	1-421-776-11	LFT	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
	*1-621-058-11	FC BOARD ********	
	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
	*1-533-146-00	HOLDER, FUSE	
	*4-341-751-01	EYELET EY1,EY2	

<FUSE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
F1	⚠.1-532-299-11	FUSE, TIME-LAG (T5A)	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1270-238-A	QB BOARD, COMPLETE ******************	
	1-537-167-11	TERMINAL BOARD, INPUT/OUTPUT	

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
C201	1-102-114-00	CERAMIC 470PF 10% 50V	
C202	1-124-927-11	ELECT 4.7MF 20% 50V	
C203	1-101-004-00	CERAMIC 0.01MF 50V	
C204	1-123-380-00	ELECT 1MF 20% 50V	
C205	1-123-356-00	ELECT 10MF 20% 16V	
C209	1-102-114-00	CERAMIC 470PF 10% 50V	
C210	1-102-114-00	CERAMIC 470PF 10% 50V	
C211	1-123-380-00	ELECT 1MF 20% 50V	
C212	1-124-499-11	ELECT 1MF 20% 50V	
C213	1-123-356-00	ELECT 10MF 20% 16V	
C214	1-102-114-00	CERAMIC 470PF 10% 50V	
C215	1-126-101-11	ELECT 100MF 20% 16V	
C216	1-124-910-11	ELECT 47MF 20% 16V	
C217	1-123-356-00	ELECT 10MF 20% 25V	
C218	1-123-369-00	ELECT 4.7MF 20% 25V	

REF.NO.	PART NO.	DESCRIPTION				REMARK
C219	1-124-910-11	ELECT	47MF	20%	16V	
C220	1-124-910-11	ELECT	47MF	20%	16V	
C221	1-126-103-11	ELECT	470MF	20%	16V	
C222	1-126-103-11	ELECT	470MF	20%	16V	
C223	1-108-812-11	MYLAR	0.047MF	5%	50V	
C224	1-124-557-11	ELECT	1000MF	20%	25V	
C225	1-101-006-00	CERAMIC	0.047MF		50V	
C226	1-123-356-00	ELECT	10MF	20%	16V	
C227	1-123-356-00	ELECT	10MF	20%	16V	
C228	1-101-006-00	CERAMIC	0.047MF		50V	
C229	1-126-103-11	ELECT	470MF	20%	16V	
C235	1-136-165-00	FILM	0.1MF	5%	50V	
C236	1-136-153-00	FILM	0.01MF	5%	50V	
C237	1-102-114-00	CERAMIC	470PF	10%	50V	

<DIODE>

D201	8-719-110-36	DIODE RD13ES-B2
D202	8-719-911-19	DIODE 1SS119
D203	8-719-911-19	DIODE 1SS119
D204	8-719-911-19	DIODE 1SS119
D205	8-719-911-19	DIODE 1SS119
D206	8-719-911-19	DIODE 1SS119

<IC>

IC201	8-759-987-16	IC LM393P
IC202	8-759-208-94	IC CX-894
IC203	8-759-800-59	IC LA2600
IC204	8-759-101-77	IC UPC1241H
IC205	8-759-982-25	IC RC78L09A
IC206	8-759-604-39	IC M5F78M12L
IC207	8-759-929-65	IC LM7912CT
IC210	8-759-040-53	IC MC14053BCP

<TRANSISTOR>

Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q202	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q203	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q204	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q205	8-729-900-85	TRANSISTOR DTC144WS
Q206	8-729-900-85	TRANSISTOR DTC144WS
Q210	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q211	8-729-119-78	TRANSISTOR 2SC2785-HFE

<CONNECTOR>

CNJ201	1-566-980-21	CONNECTOR, ROUND TYPE 4P
QB1	*1-566-063-11	PIN, CONNECTOR 11P
QB2	*1-566-054-11	PIN, CONNECTOR 2P
QB3	*1-566-060-11	PIN, CONNECTOR 8P
QB4	*1-566-056-11	PIN, CONNECTOR 4P
QB5	*1-566-055-11	PIN, CONNECTOR 3P
QB6	*1-566-055-11	PIN, CONNECTOR 3P
QB7	*1-566-055-11	PIN, CONNECTOR 3P

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R201	1-249-438-11	CARBON	56K	5%	1/4W	
R202	1-249-435-11	CARBON	33K	5%	1/4W	
R203	1-249-423-11	CARBON	3.3K	5%	1/4W	
R204	1-249-438-11	CARBON	56K	5%	1/4W	
R205	1-249-430-11	CARBON	12K	5%	1/4W	
R206	1-249-437-11	CARBON	47K	5%	1/4W	
R207	1-249-433-11	CARBON	22K	5%	1/4W	
R208	1-249-433-11	CARBON	22K	5%	1/4W	
R212	1-249-438-11	CARBON	56K	5%	1/4W	
R213	1-249-429-11	CARBON	10K	5%	1/4W	
R214	1-249-435-11	CARBON	33K	5%	1/4W	
R215	1-249-437-11	CARBON	47K	5%	1/4W	
R216	1-249-429-11	CARBON	10K	5%	1/4W	
R217	1-249-437-11	CARBON	47K	5%	1/4W	
R218	1-247-887-00	CARBON	220K	5%	1/4W	
R219	1-249-429-11	CARBON	10K	5%	1/4W	
R220	1-249-419-11	CARBON	1.5K	5%	1/4W	
R221	1-249-408-11	CARBON	180	5%	1/4W	
R222	1-249-421-11	CARBON	2.2K	5%	1/4W	
R223	1-249-421-11	CARBON	2.2K	5%	1/4W	
R224	1-249-419-11	CARBON	1.5K	5%	1/4W	
R225	1-249-381-11	CARBON	1	5%	1/4W	F
R226	1-249-435-11	CARBON	33K	5%	1/4W	
R227	1-249-429-11	CARBON	10K	5%	1/4W	
R228	1-249-435-11	CARBON	33K	5%	1/4W	
R229	1-249-429-11	CARBON	10K	5%	1/4W	
R230	1-249-417-11	CARBON	1K	5%	1/4W	
R231	1-249-411-11	CARBON	330	5%	1/4W	
R235	1-249-417-11	CARBON	1K	5%	1/4W	
R236	1-247-104-00	CARBON	75	5%	1/4W	
R237	1-249-429-11	CARBON	10K	5%	1/4W	
R238	1-249-425-11	CARBON	4.7K	5%	1/4W	
R239	1-249-405-11	CARBON	100	5%	1/4W	
R240	1-249-421-11	CARBON	2.2K	5%	1/4W	
R241	1-249-401-11	CARBON	47	5%	1/4W	
R242	1-249-401-11	CARBON	47	5%	1/4W	
R243	1-249-405-11	CARBON	100	5%	1/4W	
R244	1-249-401-11	CARBON	47	5%	1/4W	
R245	1-249-417-11	CARBON	1K	5%	1/4W	
R246	1-249-417-11	CARBON	1K	5%	1/4W	
R248	1-249-421-11	CARBON	2.2K	5%	1/4W	
R249	1-249-401-11	CARBON	47	5%	1/4W	

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*A-1270-292-A QA BOARD, COMPLETE
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*3-683-631-01 CLAMP

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C1	1-124-034-51	ELECT	33MF	20%	16V	
C3	1-126-320-11	ELECT	10MF	20%	16V	
C4	1-101-006-00	CERAMIC	0.047MF		50V	
C5	1-124-034-51	ELECT	33MF	20%	16V	
C7	1-126-320-11	ELECT	10MF	20%	16V	
C8	1-101-006-00	CERAMIC	0.047MF		50V	
C9	1-124-034-51	ELECT	33MF	20%	16V	
C11	1-126-320-11	ELECT	10MF	20%	16V	
C12	1-101-006-00	CERAMIC	0.047MF		50V	
C13	1-124-034-51	ELECT	33MF	20%	16V	
C14	1-102-973-00	CERAMIC	100PF	5%	50V	
C15	1-126-101-11	ELECT	100MF	20%	16V	
C16	1-124-034-51	ELECT	33MF	20%	16V	
C17	1-102-973-00	CERAMIC	100PF	5%	50V	
C18	1-126-101-11	ELECT	100MF	20%	16V	
C19	1-123-356-00	ELECT	10MF	20%	16V	
C20	1-130-489-00	MYLAR	0.033MF	5%	50V	
C21	1-126-101-11	ELECT	100MF	20%	16V	

QA

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
C22	1-101-006-00	CERAMIC	0.047MF		50V	
C23	1-124-119-00	ELECT	330MF	20%	16V	
C24	1-101-006-00	CERAMIC	0.047MF		50V	
C25	1-124-119-00	ELECT	330MF	20%	16V	
C32	1-126-101-11	ELECT	100MF	20%	16V	
C33	1-123-356-00	ELECT	10MF	20%	16V	
C34	1-101-006-00	CERAMIC	0.047MF		50V	
C35	1-123-356-00	ELECT	10MF	20%	16V	
C36	1-123-356-00	ELECT	10MF	20%	16V	
C37	1-123-356-00	ELECT	10MF	20%	16V	
C38	1-101-006-00	CERAMIC	0.047MF		50V	
C39	1-124-034-51	ELECT	33MF	20%	16V	
C40	1-130-483-00	MYLAR	0.01MF	5%	50V	
C41	1-123-356-00	ELECT	10MF	20%	16V	
C43	1-101-004-00	CERAMIC	0.01MF		50V	
C44	1-123-356-00	ELECT	10MF	20%	16V	
C45	1-101-004-00	CERAMIC	0.01MF		50V	
C46	1-101-004-00	CERAMIC	0.01MF		50V	
C47	1-101-880-00	CERAMIC	47PF	5%	50V	
C48	1-102-527-11	CERAMIC	82PF	5%	50V	
C49	1-123-380-00	ELECT	1MF	20%	50V	
C50	1-124-360-00	ELECT	1000MF	20%	16V	
C51	1-123-380-00	ELECT	1MF	20%	50V	
C52	1-124-477-11	ELECT	47MF	20%	16V	
C53	1-130-489-00	MYLAR	0.033MF	5%	50V	
C54	1-123-356-00	ELECT	10MF	20%	25V	
C55	1-123-356-00	ELECT	10MF	20%	16V	
C56	1-123-380-00	ELECT	1MF	20%	50V	
C57	1-102-965-00	CERAMIC	39PF	5%	50V	
C58	⚠1-101-006-91	CERAMIC	0.047MF		50V	
C59	1-126-320-11	ELECT	10MF	20%	16V	
C70	1-123-356-00	ELECT	10MF	20%	16V	
C72	1-102-951-00	CERAMIC	15PF	5%	50V	
C73	1-102-951-00	CERAMIC	15PF	5%	50V	
C74	1-124-477-11	ELECT	47MF	20%	16V	
C75	1-123-356-00	ELECT	10MF	20%	16V	
C76	1-124-360-00	ELECT	1000MF	20%	16V	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D1	8-719-911-19	DIODE 1SS119	
D2	8-719-911-19	DIODE 1SS119	
D3	8-719-911-19	DIODE 1SS119	
D4	8-719-911-19	DIODE 1SS119	
D5	8-719-911-19	DIODE 1SS119	
D6	8-719-911-19	DIODE 1SS119	
D7	8-719-911-19	DIODE 1SS119	
D8	8-719-911-19	DIODE 1SS119	
D9	8-719-911-19	DIODE 1SS119	
D10	8-719-911-19	DIODE 1SS119	
D11	8-719-911-19	DIODE 1SS119	
D12	8-719-911-19	DIODE 1SS119	
D13	8-719-911-19	DIODE 1SS119	
D14	8-719-911-55	DIODE U05G	
D15	8-719-911-55	DIODE U05G	
D16	8-719-911-55	DIODE U05G	
D17	8-719-911-19	DIODE 1SS119	
D18	8-719-911-55	DIODE U05G	
D19	8-719-109-85	DIODE RD5.1ES-B2	
D20	8-719-911-19	DIODE 1SS119	
D21	8-719-911-19	DIODE 1SS119	
D25	8-719-911-19	DIODE 1SS119	
D26	8-719-911-19	DIODE 1SS119	
D27	8-719-911-19	DIODE 1SS119	
D30	8-719-110-22	DIODE RD11ES-B2	
D31	8-719-110-22	DIODE RD11ES-B2	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1	8-759-987-16	IC LM393P	
IC2	8-759-040-53	IC MC14053BCP	
IC3	8-759-208-94	IC CX-894	
IC4	8-759-208-94	IC CX-894	
IC5	8-759-984-03	IC LM339N	
IC6	8-752-037-04	IC CX-7948A	
IC7	8-759-982-34	IC RC78M09FA	
IC8	8-759-604-35	IC NJM78M05A	
IC9	8-759-604-39	IC M5F78M12L	
IC10	8-759-604-39	IC M5F78M12L	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q2	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q3	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q5	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q6	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q7	8-729-140-96	TRANSISTOR 2SD774-34	
Q8	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q9	8-729-140-97	TRANSISTOR 2SB734-34	
Q12	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q13	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q14	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q15	8-729-140-97	TRANSISTOR 2SB734-34	
Q16	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q17	8-729-140-97	TRANSISTOR 2SB734-34	
Q18	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q19	8-729-900-85	TRANSISTOR DTC144WS	
Q25	8-729-900-85	TRANSISTOR DTC144WS	
Q26	8-729-384-48	TRANSISTOR 2SA844-E	
Q27	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q28	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q29	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q30	8-729-119-78	TRANSISTOR 2SC2785-HFE	

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
QA1	*1-566-063-11	PIN, CONNECTOR 11P	
QA2	*1-566-054-11	PIN, CONNECTOR 2P	
QA3	*1-566-063-11	PIN, CONNECTOR 11P	
QA4	*1-566-064-11	PIN, CONNECTOR 12P	
QA5	*1-566-060-11	PIN, CONNECTOR 8P	
QA6	*1-566-055-11	PIN, CONNECTOR 3P	
QA7	*1-566-056-11	PIN, CONNECTOR 4P	
QA8	*1-566-059-11	PIN, CONNECTOR 7P	
QA9	*1-566-058-11	PIN, CONNECTOR 6P	
QA10	*1-566-056-11	PIN, CONNECTOR 4P	
QA12	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
QA13	*1-566-060-11	PIN, CONNECTOR 8P	
QA14	*1-566-060-11	PIN, CONNECTOR 8P	
QA15	*1-566-057-11	PIN, CONNECTOR 5P	
QA16	*1-566-054-11	PIN, CONNECTOR 2P	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1	1-214-702-00	METAL	75	1%	1/4W	
R2	1-249-434-11	CARBON	27K	5%	1/4W	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R3	1-249-438-11	CARBON	56K	5%	1/4W	
R4	1-249-417-11	CARBON	1K	5%	1/4W	
R5	1-249-421-11	CARBON	2.2K	5%	1/4W	
R6	1-249-405-11	CARBON	100	5%	1/4W	
R7	1-249-393-11	CARBON	10	5%	1/4W	
R8	1-247-711-11	CARBON	680	5%	1/4W	
R9	1-214-702-00	METAL	75	1%	1/4W	
R10	1-249-434-11	CARBON	27K	5%	1/4W	
R11	1-249-438-11	CARBON	56K	5%	1/4W	
R12	1-249-417-11	CARBON	1K	5%	1/4W	
R13	1-249-421-11	CARBON	2.2K	5%	1/4W	
R14	1-249-405-11	CARBON	100	5%	1/4W	
R15	1-249-393-11	CARBON	10	5%	1/4W	
R16	1-247-711-11	CARBON	680	5%	1/4W	
R17	1-214-702-00	METAL	75	1%	1/4W	
R18	1-249-434-11	CARBON	27K	5%	1/4W	
R19	1-249-438-11	CARBON	56K	5%	1/4W	
R20	1-249-417-11	CARBON	1K	5%	1/4W	
R21	1-249-421-11	CARBON	2.2K	5%	1/4W	
R22	1-249-405-11	CARBON	100	5%	1/4W	
R23	1-249-393-11	CARBON	10	5%	1/4W	
R24	1-247-711-11	CARBON	680	5%	1/4W	
R25	1-214-702-00	METAL	75	1%	1/4W	
R26	1-249-417-11	CARBON	1K	5%	1/4W	
R27	1-249-439-11	CARBON	68K	5%	1/4W	
R28	1-249-420-11	CARBON	1.8K	5%	1/4W	
R29	1-249-437-11	CARBON	47K	5%	1/4W	
R30	1-214-702-00	METAL	75	1%	1/4W	
R31	1-249-417-11	CARBON	1K	5%	1/4W	
R32	1-249-439-11	CARBON	68K	5%	1/4W	
R33	1-249-420-11	CARBON	1.8K	5%	1/4W	
R34	1-249-437-11	CARBON	47K	5%	1/4W	
R35	1-249-410-11	CARBON	270	5%	1/4W	
R36	1-249-429-11	CARBON	10K	5%	1/4W	
R37	1-249-405-11	CARBON	100	5%	1/4W	
R38	1-249-465-11	CARBON	47K	5%	1/4W	
R39	1-249-437-11	CARBON	47K	5%	1/4W	
R40	1-249-438-11	CARBON	56K	5%	1/4W	
R41	1-249-417-11	CARBON	1K	5%	1/4W	
R42	1-249-417-11	CARBON	1K	5%	1/4W	
R43	1-249-417-11	CARBON	1K	5%	1/4W	
R44	1-247-713-11	CARBON	1K	5%	1/4W	
R45	1-249-417-11	CARBON	1K	5%	1/4W	
R46	1-249-423-11	CARBON	3.3K	5%	1/4W	
R47	1-249-419-11	CARBON	1.5K	5%	1/4W	
R48	1-249-423-11	CARBON	3.3K	5%	1/4W	
R49	1-249-424-11	CARBON	3.9K	5%	1/4W	
R50	1-249-439-11	CARBON	68K	5%	1/4W	
R51	1-249-423-11	CARBON	3.3K	5%	1/4W	
R52	1-249-403-11	CARBON	68	5%	1/4W	
R53	1-249-402-11	CARBON	56	5%	1/4W	
R54	1-249-417-11	CARBON	1K	5%	1/4W	
R55	1-249-417-11	CARBON	1K	5%	1/4W	
R56	1-249-417-11	CARBON	1K	5%	1/4W	
R57	1-249-398-11	CARBON	27	5%	1/4W	
R58	1-249-398-11	CARBON	27	5%	1/4W	
R59	1-249-398-11	CARBON	27	5%	1/4W	
R60	1-247-887-00	CARBON	220K	5%	1/4W	
R61	1-249-437-11	CARBON	47K	5%	1/4W	
R62	1-215-441-00	METAL	6.8K	1%	1/4W	
R63	1-215-447-00	METAL	12K	1%	1/4W	
R64	1-247-711-11	CARBON	680	5%	1/4W	
R65	1-215-441-00	METAL	6.8K	1%	1/4W	
R66	1-215-441-00	METAL	6.8K	1%	1/4W	
R67	1-247-711-11	CARBON	680	5%	1/4W	
R74	1-215-394-00	METAL	75	1%	1/4W	
R78	1-214-702-00	METAL	75	1%	1/4W	
R80	1-249-407-11	CARBON	150	5%	1/4W	
R81	1-249-407-11	CARBON	150	5%	1/4W	
R82	1-249-429-11	CARBON	10K	5%	1/4W	
R83	1-249-436-11	CARBON	39K	5%	1/4W	
R84	1-249-407-11	CARBON	150	5%	1/4W	
R85	1-249-429-11	CARBON	10K	5%	1/4W	
R86	1-249-429-11	CARBON	10K	5%	1/4W	
R87	1-249-429-11	CARBON	10K	5%	1/4W	
R88	1-249-429-11	CARBON	10K	5%	1/4W	
R89	1-249-433-11	CARBON	22K	5%	1/4W	
R90	1-249-433-11	CARBON	22K	5%	1/4W	
R91	1-249-433-11	CARBON	22K	5%	1/4W	
R92	1-249-433-11	CARBON	22K	5%	1/4W	
R93	⚠ 1-247-851-91	CARBON	6.8K	5%	1/4W	
R94	⚠ 1-247-855-91	CARBON	10K	5%	1/4W	
R95	1-249-417-11	CARBON	1K	5%	1/4W	
R96	1-249-429-11	CARBON	10K	5%	1/4W	
R97	1-249-427-11	CARBON	6.8K	5%	1/4W	
R98	1-249-417-11	CARBON	1K	5%	1/4W	
R99	1-247-903-00	CARBON	1M	5%	1/4W	
R100	1-249-439-11	CARBON	68K	5%	1/4W	
R101	1-249-439-11	CARBON	68K	5%	1/4W	
R102	1-249-428-11	CARBON	8.2K	5%	1/4W	
R103	1-249-429-11	CARBON	10K	5%	1/4W	
R104	1-249-429-11	CARBON	10K	5%	1/4W	
R105	1-249-427-11	CARBON	6.8K	5%	1/4W	
R106	1-249-441-11	CARBON	100K	5%	1/4W	
R107	1-247-883-00	CARBON	150K	5%	1/4W	
R108	1-249-420-11	CARBON	1.8K	5%	1/4W	
R109	1-249-437-11	CARBON	47K	5%	1/4W	
R110	1-249-437-11	CARBON	47K	5%	1/4W	
R111	1-249-427-11	CARBON	6.8K	5%	1/4W	
R112	1-249-415-11	CARBON	680	5%	1/4W	
R113	1-247-721-11	CARBON	4.7K	5%	1/4W	
R114	1-249-416-11	CARBON	820	5%	1/4W	
R115	1-249-436-11	CARBON	39K	5%	1/4W	
R116	1-249-438-11	CARBON	56K	5%	1/4W	
R117	1-249-433-11	CARBON	22K	5%	1/4W	
R130	1-214-702-00	METAL	75	1%	1/4W	
R131	1-249-407-11	CARBON	150	5%	1/4W	
R132	1-249-402-11	CARBON	56	5%	1/4W	
R133	1-249-417-11	CARBON	1K	5%	1/4W	
R134	1-249-402-11	CARBON	56	5%	1/4W	
R135	1-249-421-11	CARBON	2.2K	5%	1/4W	
R136	1-214-716-00	METAL	300	1%	1/4W	
R137	1-214-705-00	METAL	100	1%	1/4W	
R138	1-249-405-11	CARBON	100	5%	1/4W	
R139	1-249-421-11	CARBON	2.2K	5%	1/4W	
R140	1-249-405-11	CARBON	100	5%	1/4W	
R141	1-249-421-11	CARBON	2.2K	5%	1/4W	
R142	1-249-417-11	CARBON	1K	5%	1/4W	
R143	1-249-417-11	CARBON	1K	5%	1/4W	
R144	1-249-421-11	CARBON	2.2K	5%	1/4W	
R145	1-249-417-11	CARBON	1K	5%	1/4W	
R146	1-249-429-11	CARBON	10K	5%	1/4W	
R147	1-249-421-11	CARBON	2.2K	5%	1/4W	
R148	1-249-405-11	CARBON	100	5%	1/4W	
R149	1-249-414-11	CARBON	560	5%	1/4W	
R150	1-215-394-00	METAL	75	1%	1/4W	
R151	1-249-401-11	CARBON	47	5%	1/4W	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R152	1-249-417-11	CARBON	1K	5%	1/4W	

<CRYSTAL>

X1	1-567-505-11	OSCILLATOR, CRYSTAL				

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	*1-621-068-11	CR BOARD ********
	1-526-812-11	SOCKET, PICTURE TUBE
	1-556-880-81	LEAD ASSY, HIGH-VOLTAGE
	4-371-837-01	SPACER (TO-126), BN
	*4-383-071-01	BRACKET, TRANSISTOR

<CAPACITOR>

C701	1-101-006-00	CERAMIC	0.047MF		50V	
C702	1-136-165-00	FILM	0.1MF	5%	50V	
C704	⚠1-126-174-51	ELECT	10MF	20%	350V	
C705	1-102-050-00	CERAMIC	0.01MF	99%	500V	
C706	1-162-115-00	CERAMIC	330PF	10%	2KV	
C707	1-162-115-00	CERAMIC	330PF	10%	2KV	
C708	1-106-359-00	MYLAR	0.0047MF	5%	50V	
C709	1-101-006-00	CERAMIC	0.047MF		50V	

<CONNECTOR>

CR1	*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P
CR2	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P
CR3	*1-566-058-11	PIN, CONNECTOR 6P
CR4	*1-566-057-11	PIN, CONNECTOR 5P
CR5	*1-566-054-11	PIN, CONNECTOR 2P

<DIODE>

D701	8-719-911-19	DIODE 1SS119
D702	8-719-911-19	DIODE 1SS119
D703	8-719-911-19	DIODE 1SS119
D704	8-719-911-19	DIODE 1SS119
D705	8-719-911-19	DIODE 1SS119
D706	8-719-911-19	DIODE 1SS119
D707	8-719-110-36	DIODE RD13ES-B2

<COIL>

L701	1-408-159-00	COIL, SPOOK CHOKE 3.3UH	
L702	1-408-159-00	COIL, SPOOK CHOKE 3.3UH	
L703	1-408-413-00	INDUCTOR	22UH
L704	1-408-413-00	INDUCTOR	22UH

<NEON LAMP>

NL701	1-519-108-XX	LAMP, NEON

<TRANSISTOR>

Q701	8-729-821-02	TRANSISTOR 2SC3503-DE
Q702	8-729-821-02	TRANSISTOR 2SC3503-DE
Q703	8-729-801-88	TRANSISTOR 2SA1381-D
Q704	8-729-801-88	TRANSISTOR 2SA1381-D

<RESISTOR>

R701	1-249-405-11	CARBON	100	5%	1/4W	F

REF.NO.	PART NO.	DESCRIPTION				REMARK
R703	1-249-405-11	CARBON	100	5%	1/4W	F
R704	1-215-926-00	METAL OXIDE	33K	5%	3W	F
R705	1-215-431-00	METAL	2.7K	1%	1/4W	
R706	1-216-510-11	METAL OXIDE	8.2K	5%	5W	F
R707	1-247-700-11	CARBON	100	5%	1/4W	F
R708	1-202-561-00	SOLID	330	10%	1/2W	
R709	1-202-828-11	SOLID	6.8K	10%	1/2W	
R710	1-202-847-00	SOLID	560K	10%	1/2W	
R711	1-202-847-00	SOLID	560K	10%	1/2W	
R712	1-202-814-11	SOLID	33K	10%	1/2W	
R713	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R714	1-202-818-00	SOLID	1K	10%	1/2W	

<SPARK GAP>

SG701	1-519-063-XX	DISCHARGING GAP

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	*1-621-069-11	CG BOARD ********
	1-526-812-11	SOCKET, PICTURE TUBE
	1-556-880-81	LEAD ASSY, HIGH-VOLTAGE
	4-371-837-01	SPACER (TO-126), BN
	*4-383-071-01	BRACKET, TRANSISTOR

<CAPACITOR>

C721	1-101-006-00	CERAMIC	0.047MF		50V	
C722	1-136-165-00	FILM	0.1MF	5%	50V	
C724	⚠1-126-174-51	ELECT	10MF	20%	350V	
C725	1-102-050-00	CERAMIC	0.01MF	99%	500V	
C726	1-162-115-00	CERAMIC	330PF	10%	2KV	
C727	1-162-115-00	CERAMIC	330PF	10%	2KV	
C728	1-106-359-00	MYLAR	0.0047MF	5%	50V	
C729	1-101-006-00	CERAMIC	0.047MF		50V	

<CONNECTOR>

CG1	*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P
CG2	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P
CG3	*1-566-058-11	PIN, CONNECTOR 6P
CG4	*1-566-057-11	PIN, CONNECTOR 5P
CG5	*1-566-054-11	PIN, CONNECTOR 2P

<DIODE>

D721	8-719-911-19	DIODE 1SS119
D722	8-719-911-19	DIODE 1SS119
D723	8-719-911-19	DIODE 1SS119
D724	8-719-911-19	DIODE 1SS119
D725	8-719-911-19	DIODE 1SS119
D726	8-719-911-19	DIODE 1SS119
D727	8-719-110-36	DIODE RD13ES-B2

<COIL>

L721	1-408-159-00	COIL, SPOOK CHOKE 3.3UH	
L722	1-408-159-00	COIL, SPOOK CHOKE 3.3UH	
L723	1-408-413-00	INDUCTOR	22UH
L724	1-408-413-00	INDUCTOR	22UH

<NEON LAMP>

NL721	1-519-108-XX	LAMP, NEON

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q721	8-729-821-02	TRANSISTOR 2SC3503-DE	
Q722	8-729-821-02	TRANSISTOR 2SC3503-DE	
Q723	8-729-801-88	TRANSISTOR 2SA1381-D	
Q724	8-729-801-88	TRANSISTOR 2SA1381-D	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R721	1-249-405-11	CARBON	100	5%	1/4W	F
R723	1-249-405-11	CARBON	100	5%	1/4W	F
R724	1-215-926-00	METAL OXIDE	33K	5%	3W	F
R725	1-215-431-00	METAL	2.7K	1%	1/4W	
R726	1-216-510-11	METAL OXIDE	8.2K	5%	5W	F
R727	1-247-700-11	CARBON	100	5%	1/4W	F
R728	1-202-561-00	SOLID	330	10%	1/2W	
R729	1-202-828-11	SOLID	6.8K	10%	1/2W	
R730	1-202-847-00	SOLID	560K	10%	1/2W	
R731	1-202-847-00	SOLID	560K	10%	1/2W	
R732	1-202-814-11	SOLID	33K	10%	1/2W	
R733	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R734	1-202-818-00	SOLID	1K	10%	1/2W	

<SPARK GAP>

REF.NO.	PART NO.	DESCRIPTION	REMARK
SG721	1-519-063-XX	DISCHARGING GAP	

****

*1-621-070-11 CB BOARD
****

REF.NO.	PART NO.	DESCRIPTION	REMARK
	1-526-812-11	SOCKET, PICTURE TUBE	
	1-556-880-81	LEAD ASSY, HIGH-VOLTAGE	
	4-371-837-01	SPACER (TO-126), BN	
	*4-383-071-01	BRACKET, TRANSISTOR	

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C741	1-101-006-00	CERAMIC	0.047MF		50V	
C742	1-136-165-00	FILM	0.1MF	5%	50V	
C744 ⚠	1-126-174-51	ELECT	10MF	20%	350V	
C745	1-102-050-00	CERAMIC	0.01MF	99%	500V	
C746	1-162-115-00	CERAMIC	330PF	10%	2KV	
C747	1-162-115-00	CERAMIC	330PF	10%	2KV	
C748	1-106-359-00	MYLAR	0.0047MF	5%	50V	
C749	1-101-006-00	CERAMIC	0.047MF		50V	

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
CB1	*1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P	
CB2	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
CB3	*1-566-058-11	PIN, CONNECTOR 6P	
CB4	*1-566-057-11	PIN, CONNECTOR 5P	
CB5	*1-566-054-11	PIN, CONNECTOR 2P	

<DIODE>

REF.NO.	PART NO.	DESCRIPTION	REMARK
D741	8-719-911-19	DIODE 1SS119	
D742	8-719-911-19	DIODE 1SS119	
D743	8-719-911-19	DIODE 1SS119	
D744	8-719-911-19	DIODE 1SS119	
D745	8-719-911-19	DIODE 1SS119	
D746	8-719-911-19	DIODE 1SS119	
D747	8-719-110-36	DIODE RD13ES-B2	

<COIL>

REF.NO.	PART NO.	DESCRIPTION		REMARK
L741	1-408-159-00	COIL, SPOOK CHOKE 3.3UH		
L742	1-408-159-00	COIL, SPOOK CHOKE 3.3UH		
L743	1-408-413-00	INDUCTOR	22UH	
L744	1-408-413-00	INDUCTOR	22UH	

<NEON LAMP>

REF.NO.	PART NO.	DESCRIPTION	REMARK
NL741	1-519-108-XX	LAMP, NEON	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q741	8-729-821-02	TRANSISTOR 2SC3503-DE	
Q742	8-729-821-02	TRANSISTOR 2SC3503-DE	
Q743	8-729-801-88	TRANSISTOR 2SA1381-D	
Q744	8-729-801-88	TRANSISTOR 2SA1381-D	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R741	1-249-405-11	CARBON	100	5%	1/4W	F
R743	1-249-405-11	CARBON	100	5%	1/4W	F
R744	1-215-926-00	METAL OXIDE	33K	5%	3W	F
R745	1-215-431-00	METAL	2.7K	1%	1/4W	
R746	1-216-510-11	METAL OXIDE	8.2K	5%	5W	F
R747	1-247-700-11	CARBON	100	5%	1/4W	F
R748	1-202-561-00	SOLID	330	10%	1/2W	
R749	1-202-828-11	SOLID	6.8K	10%	1/2W	
R750	1-202-847-00	SOLID	560K	10%	1/2W	
R751	1-202-847-00	SOLID	560K	10%	1/2W	
R752	1-202-814-11	SOLID	33K	10%	1/2W	
R753	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R754	1-202-818-00	SOLID	1K	10%	1/2W	

<SPARK GAP>

REF.NO.	PART NO.	DESCRIPTION	REMARK
SG741	1-519-063-XX	DISCHARGING GAP	

****

*1-621-053-21 DY BOARD
****

<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C901	1-162-115-00	CERAMIC	330PF	15%	1.5KV	
C902	1-162-115-00	CERAMIC	330PF	15%	1.5KV	

<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
DY1	*1-566-041-11	PIN, CONNECTOR 2P	
DY2	*1-566-041-11	PIN, CONNECTOR 2P	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R901	1-202-822-00	SOLID	2.2K	10%	1/2W	
R902	1-202-822-00	SOLID	2.2K	10%	1/2W	

<SPARK GAP>

REF.NO.	PART NO.	DESCRIPTION	REMARK
SG901	1-519-063-XX	DISCHARGING GAP	
SG902	1-519-063-XX	DISCHARGING GAP	

****

E

REF.NO.	PART NO.	DESCRIPTION				REMARK
	*A-1340-922-A	E BOARD, COMPLETE (INCLUDING, EB,EC BOARD) ************************				
	4-383-022-01	SPACER, MICA				
		<CAPACITOR>				
C1	1-124-046-00	ELECT	10MF	20%	160V	
C2	1-123-379-00	ELECT	0.47MF	20%	50V	
C3	1-102-106-00	CERAMIC	100PF	10%	50V	
C4	1-102-030-00	CERAMIC	330PF	10%	500V	
C5	1-108-700-11	MYLAR	0.047MF	10%	200V	
C6	1-102-030-00	CERAMIC	330PF	10%	500V	
C7	1-108-700-11	MYLAR	0.047MF	10%	200V	
C8	1-123-024-21	ELECT	33MF		160V	
C9	1-136-113-00	FILM	2MF	5%	200V	
C10	1-136-113-00	FILM	2MF	5%	200V	
C11	1-130-706-00	FILM	0.008MF	3%	1.6KV	
C12	1-124-662-11	ELECT	220MF	20%	50V	
C13	1-124-662-11	ELECT	220MF	20%	50V	
C14	1-124-662-11	ELECT	220MF	20%	50V	
C15	1-101-004-00	CERAMIC	0.01MF		50V	
C16	1-123-380-00	ELECT	1MF	20%	50V	
C17	1-123-356-00	ELECT	10MF	20%	25V	
C18	1-124-589-11	ELECT	47MF	20%	16V	
C19	1-108-692-11	MYLAR	0.01MF	10%	200V	
C20	1-136-153-00	FILM	0.01MF	5%	50V	
C21	1-136-153-00	FILM	0.01MF	5%	50V	
C24	1-101-006-00	CERAMIC	0.047MF		50V	
C25	1-124-122-11	ELECT	100MF	20%	16V	
C26	1-124-122-11	ELECT	100MF	20%	16V	
C27	1-101-006-00	CERAMIC	0.047MF		50V	
C28	1-101-006-00	CERAMIC	0.047MF		50V	
C29	1-123-356-00	ELECT	10MF	20%	16V	
C30	1-123-356-00	ELECT	10MF	20%	16V	
C31	1-101-006-00	CERAMIC	0.047MF		50V	
C32	1-123-356-00	ELECT	10MF	20%	25V	
C33	1-124-122-11	ELECT	100MF	20%	16V	
C34	1-108-704-11	MYLAR	0.1MF	10%	200V	
C35	1-102-125-00	CERAMIC	0.0047MF	10%	50V	
		<DIODE>				
D1	8-719-300-80	DIODE RU-1C				
D2	8-719-300-80	DIODE RU-1C				
D3	8-719-971-20	DIODE ERC38-06				
D4	8-719-971-20	DIODE ERC38-06				
D6	8-719-109-98	DIODE RD6.8ES-B3				
D7	8-719-110-09	DIODE RD8.2ES-B3				
D8	8-719-911-19	DIODE 1SS119				
D9	8-719-109-98	DIODE RD6.8ES-B3				
D10	8-719-911-19	DIODE 1SS119				
		<CONNECTOR>				
E1	*1-506-371-00	PIN, CONNECTOR 2P				
E2	*1-506-371-00	PIN, CONNECTOR 2P				
E3	*1-506-371-00	PIN, CONNECTOR 2P				
E4	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P				
E5	*1-566-060-11	PIN, CONNECTOR 8P				
E6	*1-566-055-11	PIN, CONNECTOR 3P				
E7	*1-566-062-11	PIN, CONNECTOR 10P				
E8	*1-566-060-11	PIN, CONNECTOR 8P				
E9	*1-566-055-11	PIN, CONNECTOR 3P				
E11	*1-566-055-11	PIN, CONNECTOR 3P				
		<IC>				
IC1	8-759-982-26	IC RC78L12A				
IC2	8-759-145-58	IC UPC4558C				
IC3	8-759-929-65	IC LM7912CT				
		<COIL>				
L1	1-459-155-00	COIL (WITH CORE) 45UH				
L2	1-459-155-00	COIL (WITH CORE) 45UH				
L5	1-459-241-12	COIL, HORIZONTAL LINIALITY				
L6	1-459-348-00	COIL, VAR, FERRITE (HWC)				
L7	1-459-348-00	COIL, VAR, FERRITE (HWC)				
L8	1-459-348-00	COIL, VAR, FERRITE (HWC)				
		<TRANSISTOR>				
Q1	8-729-800-80	TRANSISTOR 2SD1399-CA				
Q2	8-729-902-00	TRANSISTOR 2SC3163				
Q3	8-729-119-80	TRANSISTOR 2SC2688-LK				
Q4	8-729-119-80	TRANSISTOR 2SC2688-LK				
Q5	8-729-802-71	TRANSISTOR 2SA1407-D				
Q6	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q7	8-729-900-85	TRANSISTOR DTC144WS				
Q9	8-729-119-76	TRANSISTOR 2SA1175-HFE				
		<RESISTOR>				
R1	1-249-417-11	CARBON	1K	5%	1/4W	
R2	1-217-206-11	WIREWOUND	3.3	10%	2W	F
R3	1-249-417-11	CARBON	1K	5%	1/4W	F
R4	1-249-469-11	CARBON	100K	5%	1/4W	
R5	1-249-423-11	CARBON	3.3K	5%	1/4W	
R6	1-249-429-11	CARBON	10K	5%	1/4W	F
R7	1-215-921-11	METAL OXIDE	4.7K	5%	3W	F
R8	1-249-429-11	CARBON	10K	5%	1/4W	F
R9	1-215-924-00	METAL OXIDE	15K	5%	3W	F
R10	1-215-880-00	METAL OXIDE	10	5%	2W	F
R12	1-216-379-11	METAL OXIDE	6.8	5%	2W	F
R13	1-215-868-00	METAL OXIDE	680	5%	1W	F
R14	1-247-716-11	CARBON	1.8K	5%	1/4W	F
R15	1-247-716-11	CARBON	1.8K	5%	1/4W	F
R16	1-247-716-11	CARBON	1.8K	5%	1/4W	F
R17	1-249-385-11	CARBON	2.2	5%	1/4W	F
R18	1-249-385-11	CARBON	2.2	5%	1/4W	F
R19	1-249-385-11	CARBON	2.2	5%	1/4W	F
R20	1-249-405-11	CARBON	100	5%	1/4W	
R21	1-249-423-11	CARBON	3.3K	5%	1/4W	
R22	1-249-440-11	CARBON	82K	5%	1/4W	
R25	1-215-469-00	METAL	100K	1%	1/4W	
R26	1-215-443-00	METAL	8.2K	1%	1/4W	
R27	1-215-455-00	METAL	27K	1%	1/4W	
R28	1-215-475-00	METAL	180K	1%	1/4W	
R29	1-215-475-00	METAL	180K	1%	1/4W	
R30	1-215-455-00	METAL	27K	1%	1/4W	
R31	1-247-893-11	CARBON	390K	5%	1/4W	
R32	1-249-417-11	CARBON	1K	5%	1/4W	
R33	1-247-895-00	CARBON	470K	5%	1/4W	
R34	1-215-485-00	METAL	470K	1%	1/4W	
R41	1-215-863-11	METAL OXIDE	100	5%	1W	F
R42	1-249-435-11	CARBON	33K	5%	1/4W	
R43	1-215-477-00	METAL	220K	1%	1/4W	

REF.NO.	PART NO.	DESCRIPTION	REMARK
R44	1-249-413-11	CARBON 470 5% 1/4W	
R45	1-247-725-11	CARBON 10K 5% 1/4W	
R46	1-249-421-11	CARBON 2.2K 5% 1/4W	
R47	1-249-429-11	CARBON 10K 5% 1/4W	
R48	1-215-419-00	METAL 820 1% 1/4W	
		<TRANSFORMER>	
T1	1-437-078-00	TRANSFORMER, HORIZONTAL DRIVE	
T2	1-437-078-00	TRANSFORMER, HORIZONTAL DRIVE	
T3	1-439-320-00	TRANSFORMER, FERRITE (HOT)	
**			
	*1-621-055-11	EB BOARD ********	
		<CAPACITOR>	
C1	1-126-163-11	ELECT 4.7MF 20% 25V	
C2	1-126-163-11	ELECT 4.7MF 20% 25V	
C3	1-136-159-00	FILM 0.033MF 5% 50V	
C5	1-102-106-00	CERAMIC 100PF 10% 50V	
C6	1-130-475-00	MYLAR 0.0022MF 5% 50V	
C7	1-126-157-11	ELECT 10MF 20% 16V	
C8	1-136-165-00	FILM 0.1MF 5% 50V	
		<DIODE>	
D1	8-719-911-19	DIODE 1SS119	
		<IC>	
IC1	8-759-100-75	IC UPC1394C	
		<RESISTOR>	
R1	1-215-441-00	METAL 6.8K 1% 1/4W	
R2	1-249-417-11	CARBON 1K 5% 1/4W	
R3	1-249-431-11	CARBON 15K 5% 1/4W	
R4	1-249-427-11	CARBON 6.8K 5% 1/4W	
R5	1-249-441-11	CARBON 100K 5% 1/4W	
R6	1-249-423-11	CARBON 3.3K 5% 1/4W	
R7	1-249-429-11	CARBON 10K 5% 1/4W	
R8	1-249-413-11	CARBON 470 5% 1/4W	
R9	1-249-428-11	CARBON 8.2K 5% 1/4W	
R10	1-249-437-11	CARBON 47K 5% 1/4W	
R11	1-247-895-00	CARBON 470K 5% 1/4W	
R12	1-249-435-11	CARBON 33K 5% 1/4W	
R13	1-215-441-00	METAL 6.8K 1% 1/4W	
R14	1-215-441-00	METAL 6.8K 1% 1/4W	
		<PLUG>	
W1	*1-506-602-11	PLUG, L TYPE (2.0MM PITCH) 5P	
W2	*1-506-602-11	PLUG, L TYPE (2.0MM PITCH) 5P	
**			
	*1-621-060-11	EC BOARD ********	
		<CAPACITOR>	
C1	1-161-379-00	CERAMIC 0.01MF 30% 25V	
C2	1-162-290-31	CERAMIC 470PF 10% 50V	
C3	1-162-290-31	CERAMIC 470PF 10% 50V	
		<IC>	
IC1	8-759-145-58	IC UPC4558C	
		<TRANSISTOR>	
Q1	8-729-205-96	TRANSISTOR 2SC3668-0	
Q2	8-729-205-94	TRANSISTOR 2SA1428-0	
		<RESISTOR>	
R1	1-215-423-00	METAL 1.2K 1% 1/4W	
R2	1-249-417-11	CARBON 1K 5% 1/4W	
R3	1-215-445-00	METAL 10K 1% 1/4W	
R4	1-215-445-00	METAL 10K 1% 1/4W	
R5	1-215-445-00	METAL 10K 1% 1/4W	
R6	1-215-445-00	METAL 10K 1% 1/4W	
R7	1-215-375-00	METAL 12 1% 1/4W	
R8	1-215-375-00	METAL 12 1% 1/4W	
R9	1-215-375-00	METAL 12 1% 1/4W	
		<PLUG>	
W3	*1-506-603-11	PLUG, L TYPE (2.0MM PITCH) 10P	
**			
	*1-622-694-21	ED BOARD ********	
		<CONNECTOR>	
ED1	*1-566-055-11	PIN, CONNECTOR 3P	
		<COIL>	
L1	1-459-109-00	COIL,DUST CORE	
L2	1-459-109-00	COIL,DUST CORE	
		<RESISTOR>	
R1	1-215-902-11	METAL OXIDE 47K 5% 1W	F
**			
	*A-1341-335-A	D BOARD, COMPLETE (INCLUDING, DB BOARD) *********************	
	*1-535-615-11	TERMINAL (LAMP SOCKET)	
	*4-378-621-01	RETAINER, TR	
		<CAPACITOR>	
C1	1-101-004-00	CERAMIC 0.01MF 50V	
C2	1-124-122-11	ELECT 100MF 20% 25V	
C3	1-124-122-11	ELECT 100MF 20% 25V	
C4	1-124-122-11	ELECT 100MF 20% 16V	
C5	1-124-122-11	ELECT 100MF 20% 16V	
C6	1-102-947-00	CERAMIC 10PF 0.5PF 50V	
C7	1-123-381-00	ELECT 2.2MF 20% 50V	
C8	1-101-361-00	CERAMIC 150PF 5% 50V	
C9	1-130-483-00	MYLAR 0.01MF 5% 50V	
C10	1-108-816-11	MYLAR 0.1MF 5% 50V	
C12	1-123-381-00	ELECT 2.2MF 20% 50V	
C13	1-108-808-11	MYLAR 0.022MF 5% 50V	

D

REF.NO.	PART NO.	DESCRIPTION			REMARK
C14	1-123-356-00	ELECT	10MF	20%	16V
C15	1-126-103-11	ELECT	470MF	20%	16V
C16	1-101-006-00	CERAMIC	0.047MF		50V
C17	1-123-380-00	ELECT	1MF	20%	50V
C18	1-130-483-00	MYLAR	0.01MF	5%	50V
C19	1-130-480-00	FILM	0.0056MF	5%	50V
C20	1-123-380-00	ELECT	1MF	20%	50V
C21	1-123-369-00	ELECT	4.7MF	20%	25V
C22	1-123-356-00	ELECT	10MF	20%	16V
C23	1-126-103-11	ELECT	470MF	20%	16V
C24	1-106-361-00	MYLAR	0.0056MF	10%	100V
C25	1-123-380-00	ELECT	1MF	20%	50V
C26	1-108-812-11	MYLAR	0.047MF	5%	50V
C27	1-130-483-00	MYLAR	0.01MF	5%	50V
C28	1-108-808-11	MYLAR	0.022MF	5%	50V
C29	1-123-379-00	ELECT	0.47MF	20%	50V
C30	1-136-173-00	FILM	0.47MF	5%	50V
C31	1-108-812-11	MYLAR	0.047MF	5%	50V
C32	1-124-120-11	ELECT	220MF	20%	16V
C33	1-108-792-11	MYLAR	0.001MF	5%	50V
C34	1-101-004-00	CERAMIC	0.01MF		50V
C36	1-130-483-00	MYLAR	0.01MF	5%	50V
C37	1-131-367-00	TANTALUM	22MF	10%	16V
C38	1-124-034-51	ELECT	33MF	20%	16V
C39	1-108-816-11	MYLAR	0.1MF	5%	50V
C40	1-124-463-00	ELECT	0.1MF	20%	50V
C41	1-101-361-00	CERAMIC	150PF	5%	50V
C43	1-124-463-00	ELECT	0.1MF	20%	50V
C44	1-123-356-00	ELECT	10MF	20%	16V
C45	1-102-824-00	CERAMIC	470PF	5%	50V
C46	1-102-030-00	CERAMIC	330PF	10%	500V
C47	1-130-483-00	MYLAR	0.01MF	5%	50V
C48	1-101-004-00	CERAMIC	0.01MF		50V
C49	1-101-004-00	CERAMIC	0.01MF		50V
C50	1-123-369-00	ELECT	4.7MF	20%	25V
C51	1-126-177-11	ELECT	100MF	20%	6.3V
C52	1-126-177-11	ELECT	100MF	20%	6.3V
C53	1-126-157-11	ELECT	10MF	20%	16V
C54	1-101-004-00	CERAMIC	0.01MF		50V
C55	1-124-589-11	ELECT	47MF	20%	16V
C56	1-124-589-11	ELECT	47MF	20%	16V
C57	1-101-004-00	CERAMIC	0.01MF		50V
C58	1-126-177-11	ELECT	100MF	20%	6.3V
C59	1-126-177-11	ELECT	100MF	20%	6.3V
C60	1-126-157-11	ELECT	10MF	20%	16V
C61	1-126-157-11	ELECT	10MF	20%	16V
C62	1-126-157-11	ELECT	10MF	20%	16V
C63	1-124-589-11	ELECT	47MF	20%	16V
C64	1-124-589-11	ELECT	47MF	20%	16V
C65	1-101-004-00	CERAMIC	0.01MF		50V
C66	1-101-004-00	CERAMIC	0.01MF		50V
C67	1-124-120-11	ELECT	220MF	20%	16V
C68	1-124-120-11	ELECT	220MF	20%	16V
C69	1-124-122-11	ELECT	100MF	20%	16V
C70	1-124-122-11	ELECT	100MF	20%	16V
C72	1-136-161-00	FILM	0.047MF	5%	50V
C73	1-101-004-00	CERAMIC	0.01MF		50V
C74	1-101-004-00	CERAMIC	0.01MF		50V
C75	1-102-316-00	CERAMIC	15PF	5%	500V
C76	1-108-692-11	MYLAR	0.01MF	10%	200V
C77	1-108-700-11	MYLAR	0.047MF	10%	200V
C78	1-123-356-00	ELECT	10MF	20%	16V
C79	1-123-356-00	ELECT	10MF	20%	16V
C80	1-136-161-00	FILM	0.047MF	5%	50V

REF.NO.	PART NO.	DESCRIPTION			REMARK
C81	1-136-161-00	FILM	0.047MF	5%	50V
C82	1-101-004-00	CERAMIC	0.01MF		50V
C83	1-101-004-00	CERAMIC	0.01MF		50V
C84	1-102-316-00	CERAMIC	15PF	5%	500V
C85	1-108-692-11	MYLAR	0.01MF	10%	200V
C86	1-102-316-00	CERAMIC	15PF	5%	500V
C87	1-108-692-11	MYLAR	0.01MF	10%	200V
C88	1-123-381-00	ELECT	2.2MF	20%	50V
C89	1-126-320-11	ELECT	10MF	20%	16V
C401	1-126-163-11	ELECT	4.7MF	20%	50V
C402	1-126-163-11	ELECT	4.7MF	20%	50V
C403	1-126-163-11	ELECT	4.7MF	20%	50V
C404	1-126-163-11	ELECT	4.7MF	20%	50V

<DIODE>

D1	8-719-911-19	DIODE 1SS119
D2	8-719-911-19	DIODE 1SS119
D3	8-719-911-19	DIODE 1SS119
D4	8-719-911-19	DIODE 1SS119
D5	8-719-109-85	DIODE RD5.1ES-B2
D6	8-719-911-19	DIODE 1SS119
D7	8-719-911-19	DIODE 1SS119
D8	8-719-911-19	DIODE 1SS119
D9	8-719-911-19	DIODE 1SS119
D10	8-719-911-19	DIODE 1SS119
D11	8-719-911-19	DIODE 1SS119
D12	8-719-911-19	DIODE 1SS119
D13	8-719-110-36	DIODE RD13ES-B2
D14	8-719-911-19	DIODE 1SS119
D15	8-719-911-19	DIODE 1SS119
D16	8-719-911-19	DIODE 1SS119
D17	8-719-911-19	DIODE 1SS119
D401	8-719-110-42	DIODE RD15ES-B3
D402	8-719-110-36	DIODE RD13ES-B2
D403	8-719-110-36	DIODE RD13ES-B2
D404	8-719-110-36	DIODE RD13ES-B2
D405	8-719-110-36	DIODE RD13ES-B2
D406	8-719-110-36	DIODE RD13ES-B2
D407	8-719-110-36	DIODE RD13ES-B2
D408	8-719-110-36	DIODE RD13ES-B2
D409	8-719-110-36	DIODE RD13ES-B2
D410	8-719-110-36	DIODE RD13ES-B2
D411	8-719-110-36	DIODE RD13ES-B2
D412	8-719-110-36	DIODE RD13ES-B2

<CONNECTOR>

D1	*1-566-055-11	PIN, CONNECTOR 3P
D2	*1-566-055-11	PIN, CONNECTOR 3P
D3	*1-566-055-11	PIN, CONNECTOR 3P
D4	*1-566-055-11	PIN, CONNECTOR 3P
D5	*1-566-055-11	PIN, CONNECTOR 3P
D6	*1-566-055-11	PIN, CONNECTOR 3P
D7	*1-566-056-11	PIN, CONNECTOR 4P
D8	*1-566-056-11	PIN, CONNECTOR 4P
D9	*1-566-056-11	PIN, CONNECTOR 4P
D10	*1-566-059-11	PIN, CONNECTOR 7P
D11	*1-566-054-11	PIN, CONNECTOR 2P
D12	*1-566-054-11	PIN, CONNECTOR 2P
D13	*1-566-058-11	PIN, CONNECTOR 6P
D14	*1-566-055-11	PIN, CONNECTOR 3P
D15	*1-566-060-11	PIN, CONNECTOR 8P

REF.NO.	PART NO.	DESCRIPTION	REMARK
D16	*1-566-054-11	PIN, CONNECTOR 2P	
D17	*1-566-060-11	PIN, CONNECTOR 8P	
D18	*1-566-058-11	PIN, CONNECTOR 6P	
D19	*1-566-054-11	PIN, CONNECTOR 2P	
D20	*1-566-064-11	PIN, CONNECTOR 12P	
D21	*1-566-060-11	PIN, CONNECTOR 8P	
D22	*1-566-055-11	PIN, CONNECTOR 3P	
D23	*1-566-060-11	PIN, CONNECTOR 8P	
D24	*1-566-060-11	PIN, CONNECTOR 8P	
D25	*1-566-054-11	PIN, CONNECTOR 2P	
		<IC>	
IC1	8-759-100-60	IC UPC1377C	
IC2	8-749-911-21	IC BX-1121	
IC3	8-759-140-53	IC MC14053BCP	
IC4	8-759-604-39	IC M5F78M12L	
IC5	8-759-929-65	IC LM7912CT	
IC6	8-759-982-26	IC RC78L12A	
IC7	8-759-982-26	IC RC78L12A	
IC8	8-759-634-50	IC M5218AL	
IC9	8-741-112-20	IC BX-1122	
IC10	8-759-000-48	IC MC14052BCP	
IC11	8-759-634-50	IC M5218AL	
IC12	8-759-634-50	IC M5218AL	
IC13	8-759-634-50	IC M5218AL	
IC14	8-759-111-69	IC UPC1037HA	
IC15	8-759-111-69	IC UPC1037HA	
IC16	8-759-982-23	IC RC78L08A	
IC17	8-759-701-67	IC NJM79M08FA	
IC18	8-759-945-58	IC RC4558P	
IC19	8-759-945-58	IC RC4558P	
IC401	8-759-140-53	IC MC14053BCP	
IC402	8-759-140-53	IC MC14053BCP	
IC403	8-759-140-53	IC MC14053BCP	
		<LAMP>	
PL1	1-518-590-11	LAMP, PILOT (WITH HOLDER)	
PL2	1-518-590-11	LAMP, PILOT (WITH HOLDER)	
		<TRANSISTOR>	
Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q2	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q3	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q5	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q6	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q7	8-729-238-32	TRANSISTOR 2SC2383-O	
Q8	8-729-231-60	TRANSISTOR 2SD1406-YGR	
Q9	8-729-111-67	TRANSISTOR 2SB1094-L	
Q10	8-729-238-32	TRANSISTOR 2SC2383-O	
Q11	8-729-231-60	TRANSISTOR 2SD1406-YGR	
Q12	8-729-111-67	TRANSISTOR 2SB1094-L	
Q13	8-729-238-32	TRANSISTOR 2SC2383-O	
Q14	8-729-231-60	TRANSISTOR 2SD1406-YGR	
Q15	8-729-111-67	TRANSISTOR 2SB1094-L	
Q16	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q17	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q18	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q19	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q20	8-729-119-76	TRANSISTOR 2SA1175-HFE	

REF.NO.	PART NO.	DESCRIPTION	REMARK
		<RESISTOR>	
R1	1-215-457-00	METAL 33K 1% 1/4W	
R2	1-215-467-00	METAL 82K 1% 1/4W	
R3	1-247-881-00	CARBON 120K 5% 1/4W	
R4	1-249-417-11	CARBON 1K 5% 1/4W	
R5	1-249-423-11	CARBON 3.3K 5% 1/4W	
R6	1-249-434-11	CARBON 27K 5% 1/4W	
R7	1-249-425-11	CARBON 4.7K 5% 1/4W	
R8	1-249-421-11	CARBON 2.2K 5% 1/4W	
R9	1-215-447-00	METAL 12K 1% 1/4W	
R10	1-249-417-11	CARBON 1K 5% 1/4W	
R11	1-215-445-00	METAL 10K 1% 1/4W	
R12	1-215-455-00	METAL 27K 1% 1/4W	
R13	1-249-417-11	CARBON 1K 5% 1/4W	
R14	1-249-441-11	CARBON 100K 5% 1/4W	
R15	1-215-447-00	METAL 12K 1% 1/4W	
R16	1-247-903-00	CARBON 1M 5% 1/4W	
R17	1-247-903-00	CARBON 1M 5% 1/4W	
R18	1-249-441-11	CARBON 100K 5% 1/4W	
R19	1-249-405-11	CARBON 100 5% 1/4W	
R20	1-249-417-11	CARBON 1K 5% 1/4W	
R21	1-247-895-00	CARBON 470K 5% 1/4W	
R22	1-249-417-11	CARBON 1K 5% 1/4W	
R23	1-215-467-00	METAL 82K 1% 1/4W	
R24	1-215-467-00	METAL 82K 1% 1/4W	
R25	1-249-423-11	CARBON 3.3K 5% 1/4W	
R26	1-249-433-11	CARBON 22K 5% 1/4W	
R27	1-249-431-11	CARBON 15K 5% 1/4W	
R28	1-249-428-11	CARBON 8.2K 5% 1/4W	
R29	1-249-409-11	CARBON 220 5% 1/4W	
R30	1-249-411-11	CARBON 330 5% 1/4W	
R31	1-249-417-11	CARBON 1K 5% 1/4W	
R32	1-249-417-11	CARBON 1K 5% 1/4W	
R33	1-215-458-00	METAL 36K 1% 1/4W	
R34	1-249-435-11	CARBON 33K 5% 1/4W	
R35	1-249-435-11	CARBON 33K 5% 1/4W	
R36	1-249-435-11	CARBON 33K 5% 1/4W	
R37	1-249-421-11	CARBON 2.2K 5% 1/4W	
R38	1-249-424-11	CARBON 3.9K 5% 1/4W	
R39	1-249-418-11	CARBON 1.2K 5% 1/4W	
R40	1-249-438-11	CARBON 56K 5% 1/4W	
R41	1-215-446-00	METAL 11K 1% 1/4W	
R42	1-215-447-00	METAL 12K 1% 1/4W	
R43	1-215-463-00	METAL 56K 1% 1/4W	
R44	1-215-439-00	METAL 5.6K 1% 1/4W	
R45	1-215-439-00	METAL 5.6K 1% 1/4W	
R46	1-215-449-00	METAL 15K 1% 1/4W	
R47	1-249-441-11	CARBON 100K 5% 1/4W	
R48	1-249-433-11	CARBON 22K 5% 1/4W	
R49	1-249-417-11	CARBON 1K 5% 1/4W	
R50	1-249-428-11	CARBON 8.2K 5% 1/4W	
R51	1-249-405-11	CARBON 100 5% 1/4W	
R52	1-249-408-11	CARBON 180 5% 1/4W	
R53	1-249-427-11	CARBON 6.8K 5% 1/4W	
R54	1-215-415-00	METAL 560 1% 1/4W	
R55	1-215-415-00	METAL 560 1% 1/4W	
R56	1-249-405-11	CARBON 100 5% 1/4W	
R57	1-215-413-00	METAL 470 1% 1/4W	
R58	1-249-429-11	CARBON 10K 5% 1/4W	
R59	1-214-971-00	METAL 2M 1% 1/4W	
R60	1-215-467-00	METAL 82K 1% 1/4W	
R62	1-215-439-00	METAL 5.6K 1% 1/4W	
R63	1-215-431-00	METAL 2.7K 1% 1/4W	

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REF.NO.	PART NO.	DESCRIPTION				REMARK
R64	1-249-417-11	CARBON	1K	5%	1/4W	
R65	1-249-429-11	CARBON	10K	5%	1/4W	
R66	1-249-417-11	CARBON	1K	5%	1/4W	
R67	1-249-429-11	CARBON	10K	5%	1/4W	
R68	1-249-429-11	CARBON	10K	5%	1/4W	
R69	1-215-457-00	METAL	33K	1%	1/4W	
R70	1-215-421-00	METAL	1K	1%	1/4W	
R71	1-249-429-11	CARBON	10K	5%	1/4W	
R72	1-249-429-11	CARBON	10K	5%	1/4W	
R73	1-249-429-11	CARBON	10K	5%	1/4W	
R74	1-249-411-11	CARBON	330	5%	1/4W	
R75	1-249-411-11	CARBON	330	5%	1/4W	
R76	1-249-429-11	CARBON	10K	5%	1/4W	
R77	1-215-471-00	METAL	120K	1%	1/4W	
R78	1-215-443-00	METAL	8.2K	1%	1/4W	
R79	1-215-429-00	METAL	2.2K	1%	1/4W	
R80	1-215-437-00	METAL	4.7K	1%	1/4W	
R81	1-215-443-00	METAL	8.2K	1%	1/4W	
R82	1-215-453-00	METAL	22K	1%	1/4W	
R83	1-215-429-00	METAL	2.2K	1%	1/4W	
R84	1-215-437-00	METAL	4.7K	1%	1/4W	
R85	1-215-463-00	METAL	56K	1%	1/4W	
R86	1-215-445-00	METAL	10K	1%	1/4W	
R87	1-215-445-00	METAL	10K	1%	1/4W	
R88	1-249-429-11	CARBON	10K	5%	1/4W	
R89	1-215-445-00	METAL	10K	1%	1/4W	
R90	1-215-445-00	METAL	10K	1%	1/4W	
R91	1-249-429-11	CARBON	10K	5%	1/4W	
R92	1-215-449-00	METAL	15K	1%	1/4W	
R93	1-215-449-00	METAL	15K	1%	1/4W	
R94	1-215-461-00	METAL	47K	1%	1/4W	
R95	1-215-461-00	METAL	47K	1%	1/4W	
R96	1-215-451-00	METAL	18K	1%	1/4W	
R97	1-215-413-00	METAL	470	1%	1/4W	
R98	1-215-429-00	METAL	2.2K	1%	1/4W	
R99	1-215-417-00	METAL	680	1%	1/4W	
R100	1-247-887-00	CARBON	220K	5%	1/4W	
R101	1-249-429-11	CARBON	10K	5%	1/4W	
R102	1-215-451-00	METAL	18K	1%	1/4W	
R103	1-215-413-00	METAL	470	1%	1/4W	
R104	1-215-429-00	METAL	2.2K	1%	1/4W	
R105	1-215-417-00	METAL	680	1%	1/4W	
R106	1-247-887-00	CARBON	220K	5%	1/4W	
R107	1-247-104-00	CARBON	75	5%	1/4W	
R108	1-249-429-11	CARBON	10K	5%	1/4W	
R109	1-215-417-00	METAL	680	1%	1/4W	
R110	1-249-405-11	CARBON	100	5%	1/4W	
R111	1-215-415-00	METAL	560	1%	1/4W	
R112	1-249-429-11	CARBON	10K	5%	1/4W	
R113	1-215-445-00	METAL	10K	1%	1/4W	
R114	1-215-457-00	METAL	33K	1%	1/4W	
R115	1-215-457-00	METAL	33K	1%	1/4W	
R116	1-215-457-00	METAL	33K	1%	1/4W	
R117	1-215-459-00	METAL	39K	1%	1/4W	
R118	1-215-459-00	METAL	39K	1%	1/4W	
R119	1-215-459-00	METAL	39K	1%	1/4W	
R120	1-215-479-00	METAL	270K	1%	1/4W	
R121	1-215-469-00	METAL	100K	1%	1/4W	
R122	1-215-479-00	METAL	270K	1%	1/4W	
R123	1-215-469-00	METAL	100K	1%	1/4W	
R124	1-215-427-00	METAL	1.8K	1%	1/4W	
R125	1-215-468-00	METAL	91K	1%	1/4W	
R126	1-215-443-00	METAL	8.2K	1%	1/4W	
R127	1-215-469-00	METAL	100K	1%	1/4W	
R128	1-215-467-00	METAL	82K	1%	1/4W	
R129	1-215-451-00	METAL	18K	1%	1/4W	
R130	1-215-459-00	METAL	39K	1%	1/4W	
R131	1-249-417-11	CARBON	1K	5%	1/4W	
R132	1-215-459-00	METAL	39K	1%	1/4W	
R134	1-215-449-00	METAL	15K	1%	1/4W	
R135	1-215-465-00	METAL	68K	1%	1/4W	
R136	1-215-451-00	METAL	18K	1%	1/4W	
R137	1-215-471-00	METAL	120K	1%	1/4W	
R138	1-215-463-00	METAL	56K	1%	1/4W	
R139	1-215-477-00	METAL	220K	1%	1/4W	
R140	1-215-469-00	METAL	100K	1%	1/4W	
R141	1-215-473-00	METAL	150K	1%	1/4W	
R142	1-215-469-00	METAL	100K	1%	1/4W	
R143	1-215-469-00	METAL	100K	1%	1/4W	
R144	1-215-469-00	METAL	100K	1%	1/4W	
R145	1-215-469-00	METAL	100K	1%	1/4W	
R146	1-215-455-00	METAL	27K	1%	1/4W	
R147	1-215-461-00	METAL	47K	1%	1/4W	
R148	1-215-463-00	METAL	56K	1%	1/4W	
R149	1-215-449-00	METAL	15K	1%	1/4W	
R150	1-215-457-00	METAL	33K	1%	1/4W	
R151	1-215-461-00	METAL	47K	1%	1/4W	
R152	1-215-461-00	METAL	47K	1%	1/4W	
R153	1-215-461-00	METAL	47K	1%	1/4W	
R154	1-215-461-00	METAL	47K	1%	1/4W	
R155	1-215-471-00	METAL	120K	1%	1/4W	
R156	1-215-463-00	METAL	56K	1%	1/4W	
R157	1-215-477-00	METAL	220K	1%	1/4W	
R158	1-215-469-00	METAL	100K	1%	1/4W	
R159	1-215-473-00	METAL	150K	1%	1/4W	
R160	1-215-469-00	METAL	100K	1%	1/4W	
R161	1-215-469-00	METAL	100K	1%	1/4W	
R162	1-215-469-00	METAL	100K	1%	1/4W	
R163	1-215-469-00	METAL	100K	1%	1/4W	
R164	1-215-455-00	METAL	27K	1%	1/4W	
R165	1-215-461-00	METAL	47K	1%	1/4W	
R166	1-215-463-00	METAL	56K	1%	1/4W	
R167	1-215-449-00	METAL	15K	1%	1/4W	
R168	1-215-457-00	METAL	33K	1%	1/4W	
R169	1-215-461-00	METAL	47K	1%	1/4W	
R170	1-215-461-00	METAL	47K	1%	1/4W	
R171	1-215-461-00	METAL	47K	1%	1/4W	
R172	1-215-461-00	METAL	47K	1%	1/4W	
R173	1-215-441-00	METAL	6.8K	1%	1/4W	
R174	1-215-425-00	METAL	1.5K	1%	1/4W	
R175	1-215-425-00	METAL	1.5K	1%	1/4W	
R176	1-215-425-00	METAL	1.5K	1%	1/4W	
R177	1-215-441-00	METAL	6.8K	1%	1/4W	
R178	1-215-445-00	METAL	10K	1%	1/4W	
R179	1-215-457-00	METAL	33K	1%	1/4W	
R180	1-249-429-11	CARBON	10K	5%	1/4W	
R181	1-249-405-11	CARBON	100	5%	1/4W	
R182	1-249-405-11	CARBON	100	5%	1/4W	
R183	1-215-445-00	METAL	10K	1%	1/4W	
R184	1-215-417-00	METAL	680	1%	1/4W	
R185	1-249-393-11	CARBON	10	5%	1/4W	
R186	1-215-924-00	METAL OXIDE	15K	5%	3W	F
R187	1-215-875-11	METAL OXIDE	10K	5%	1W	F
R188	1-215-396-00	METAL	91	1%	1/4W	
R189	1-215-375-00	METAL	12	1%	1/4W	
R190	1-215-375-00	METAL	12	1%	1/4W	
R191	1-215-375-00	METAL	12	1%	1/4W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R192	1-215-375-00	METAL	12	1%	1/4W	
R193	1-215-375-00	METAL	12	1%	1/4W	
R194	1-215-441-00	METAL	6.8K	1%	1/4W	
R195	1-249-429-11	CARBON	10K	5%	1/4W	
R196	1-215-441-00	METAL	6.8K	1%	1/4W	
R197	1-249-429-11	CARBON	10K	5%	1/4W	
R198	1-249-405-11	CARBON	100	5%	1/4W	
R199	1-249-405-11	CARBON	100	5%	1/4W	
R200	1-215-445-00	METAL	10K	1%	1/4W	
R201	1-215-417-00	METAL	680	1%	1/4W	
R202	1-249-393-11	CARBON	10	5%	1/4W	
R203	1-215-924-00	METAL OXIDE	15K	5%	3W	F
R204	1-215-875-11	METAL OXIDE	10K	5%	1W	F
R205	1-215-391-00	METAL	56	1%	1/4W	
R206	1-215-375-00	METAL	12	1%	1/4W	
R207	1-215-375-00	METAL	12	1%	1/4W	
R208	1-215-375-00	METAL	12	1%	1/4W	
R209	1-215-375-00	METAL	12	1%	1/4W	
R210	1-215-375-00	METAL	12	1%	1/4W	
R211	1-215-445-00	METAL	10K	1%	1/4W	
R212	1-215-417-00	METAL	680	1%	1/4W	
R213	1-249-393-11	CARBON	10	5%	1/4W	
R214	1-215-924-00	METAL OXIDE	15K	5%	3W	F
R215	1-215-875-11	METAL OXIDE	10K	5%	1W	F
R217	1-215-374-00	METAL	11	1%	1/4W	
R218	1-215-375-00	METAL	12	1%	1/4W	
R219	1-215-375-00	METAL	12	1%	1/4W	
R220	1-215-375-00	METAL	12	1%	1/4W	
R221	1-215-375-00	METAL	12	1%	1/4W	
R222	1-215-419-00	METAL	820	1%	1/4W	
R223	1-215-447-00	METAL	12K	1%	1/4W	
R224	1-214-802-00	METAL	2.7	1%	1/2W	
R225	1-214-804-11	METAL	3.3	1%	1/2W	
R226	1-214-802-00	METAL	2.7	1%	1/2W	
R227	1-214-804-11	METAL	3.3	1%	1/2W	
R228	1-214-802-00	METAL	2.7	1%	1/2W	
R229	1-214-804-11	METAL	3.3	1%	1/2W	
R230	1-215-469-00	METAL	100K	1%	1/4W	
R231	1-215-469-00	METAL	100K	1%	1/4W	
R232	1-249-429-11	CARBON	10K	5%	1/4W	
R233	1-247-901-11	CARBON	820K	5%	1/4W	
R234	1-247-901-11	CARBON	820K	5%	1/4W	
R235	1-247-897-11	CARBON	560K	5%	1/4W	
R236	1-247-897-11	CARBON	560K	5%	1/4W	
R237	1-249-441-11	CARBON	100K	5%	1/4W	
R238	1-249-433-11	CARBON	22K	5%	1/4W	
R239	1-249-433-11	CARBON	22K	5%	1/4W	
R240	1-249-440-11	CARBON	82K	5%	1/4W	
R241	1-215-483-00	METAL	390K	1%	1/4W	
R242	1-215-473-00	METAL	150K	1%	1/4W	
R243	1-215-457-00	METAL	33K	1%	1/4W	
R244	1-215-457-00	METAL	33K	1%	1/4W	
R245	1-215-465-00	METAL	68K	1%	1/4W	
R246	1-215-453-00	METAL	22K	1%	1/4W	
R247	1-215-457-00	METAL	33K	1%	1/4W	
R248	1-215-469-00	METAL	100K	1%	1/4W	
R249	1-249-416-11	CARBON	820	5%	1/4W	
R250	1-249-417-11	CARBON	1K	5%	1/4W	
R251	1-249-405-11	CARBON	100	5%	1/4W	
R252	1-215-463-00	METAL	56K	1%	1/4W	
R253	1-215-461-00	METAL	47K	1%	1/4W	
R254	1-249-413-11	CARBON	470	5%	1/4W	
R255	1-249-429-11	CARBON	10K	5%	1/4W	
R256	1-249-423-11	CARBON	3.3K	5%	1/4W	
R257	1-249-423-11	CARBON	3.3K	5%	1/4W	
R258	1-249-433-11	CARBON	22K	5%	1/4W	
R259	1-249-429-11	CARBON	10K	5%	1/4W	
R260	1-249-433-11	CARBON	22K	5%	1/4W	
R261	1-249-433-11	CARBON	22K	5%	1/4W	
R262	1-249-441-11	CARBON	100K	5%	1/4W	
R263	1-215-910-00	METAL OXIDE	68	5%	3W	F
R264	1-215-910-00	METAL OXIDE	68	5%	3W	F
R265	1-215-910-00	METAL OXIDE	68	5%	3W	F
R266	1-215-910-00	METAL OXIDE	68	5%	3W	F
R401	1-249-423-11	CARBON	3.3K	5%	1/4W	
R402	1-249-417-11	CARBON	1K	5%	1/4W	
R403	1-249-417-11	CARBON	1K	5%	1/4W	
R404	1-249-417-11	CARBON	1K	5%	1/4W	
R405	1-249-417-11	CARBON	1K	5%	1/4W	
R406	1-249-417-11	CARBON	1K	5%	1/4W	
R407	1-249-417-11	CARBON	1K	5%	1/4W	
R408	1-249-417-11	CARBON	1K	5%	1/4W	
R409	1-249-417-11	CARBON	1K	5%	1/4W	
R410	1-249-417-11	CARBON	1K	5%	1/4W	
R411	1-249-417-11	CARBON	1K	5%	1/4W	
R412	1-249-405-11	CARBON	100	5%	1/4W	
R413	1-249-417-11	CARBON	1K	5%	1/4W	
R414	1-249-405-11	CARBON	100	5%	1/4W	
R415	1-249-417-11	CARBON	1K	5%	1/4W	
R416	1-249-405-11	CARBON	100	5%	1/4W	
R417	1-249-417-11	CARBON	1K	5%	1/4W	
R418	1-249-405-11	CARBON	100	5%	1/4W	
R419	1-249-405-11	CARBON	100	5%	1/4W	
R420	1-249-405-11	CARBON	100	5%	1/4W	
R421	1-249-417-11	CARBON	1K	5%	1/4W	
R422	1-249-417-11	CARBON	1K	5%	1/4W	
R423	1-249-417-11	CARBON	1K	5%	1/4W	
R424	1-249-417-11	CARBON	1K	5%	1/4W	
R425	1-249-417-11	CARBON	1K	5%	1/4W	
R426	1-249-417-11	CARBON	1K	5%	1/4W	
R427	1-249-417-11	CARBON	1K	5%	1/4W	
R428	1-249-417-11	CARBON	1K	5%	1/4W	
R429	1-249-417-11	CARBON	1K	5%	1/4W	
R430	1-249-435-11	CARBON	33K	5%	1/4W	
R431	1-215-471-00	METAL	120K	1%	1/4W	
R432	1-215-455-00	METAL	27K	1%	1/4W	
R433	1-215-477-00	METAL	220K	1%	1/4W	
R434	1-215-475-00	METAL	180K	1%	1/4W	
R435	1-215-455-00	METAL	27K	1%	1/4W	
R436	1-215-468-00	METAL	91K	1%	1/4W	
R437	1-215-471-00	METAL	120K	1%	1/4W	
R438	1-215-452-00	METAL	20K	1%	1/4W	
R439	1-215-465-00	METAL	68K	1%	1/4W	
R500	1-215-491-00	METAL	820K	1%	1/4W	

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
RV1	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV2	1-224-251-XX	RES, ADJ, METAL GLAZE 4.7K	
RV3	1-228-996-00	RES, ADJ, CARBON 47K	
RV4	1-228-996-00	RES, ADJ, CARBON 47K	
RV5	1-228-994-00	RES, ADJ, CARBON 10K	
RV6	1-228-994-00	RES, ADJ, CARBON 10K	
RV7	1-228-994-00	RES, ADJ, CARBON 10K	
RV8	1-228-994-00	RES, ADJ, CARBON 10K	
RV9	1-228-994-00	RES, ADJ, CARBON 10K	
RV10	1-228-994-00	RES, ADJ, CARBON 10K	

D **DB** **HA**

REF.NO.	PART NO.	DESCRIPTION	REMARK
RV11	1-228-994-00	RES, ADJ, CARBON 10K	
RV12	1-228-994-00	RES, ADJ, CARBON 10K	
RV13	1-228-994-00	RES, ADJ, CARBON 10K	
RV14	1-228-994-00	RES, ADJ, CARBON 10K	
RV15	1-228-994-00	RES, ADJ, CARBON 10K	
RV16	1-228-994-00	RES, ADJ, CARBON 10K	
RV17	1-228-994-00	RES, ADJ, CARBON 10K	
RV18	1-228-994-00	RES, ADJ, CARBON 10K	
RV19	1-228-994-00	RES, ADJ, CARBON 10K	
RV20	1-228-994-00	RES, ADJ, CARBON 10K	
RV21	1-228-994-00	RES, ADJ, CARBON 10K	
RV22	1-228-994-00	RES, ADJ, CARBON 10K	
RV23	1-228-994-00	RES, ADJ, CARBON 10K	
RV24	1-228-994-00	RES, ADJ, CARBON 10K	
RV25	1-228-994-00	RES, ADJ, CARBON 10K	
RV26	1-228-994-00	RES, ADJ, CARBON 10K	
RV27	1-228-994-00	RES, ADJ, CARBON 10K	
RV28	1-228-994-00	RES, ADJ, CARBON 10K	
RV29	1-228-994-00	RES, ADJ, CARBON 10K	
RV30	1-228-994-00	RES, ADJ, CARBON 10K	
RV31	1-228-994-00	RES, ADJ, CARBON 10K	
RV32	1-228-994-00	RES, ADJ, CARBON 10K	
RV33	1-228-994-00	RES, ADJ, CARBON 10K	
RV34	1-228-994-00	RES, ADJ, CARBON 10K	
RV35	1-228-994-00	RES, ADJ, CARBON 10K	
RV36	1-228-994-00	RES, ADJ, CARBON 10K	
RV37	1-228-994-00	RES, ADJ, CARBON 10K	
RV38	1-228-994-00	RES, ADJ, CARBON 10K	
RV39	1-228-994-00	RES, ADJ, CARBON 10K	
RV40	1-228-994-00	RES, ADJ, CARBON 10K	
RV41	1-228-994-00	RES, ADJ, CARBON 10K	
RV42	1-228-994-00	RES, ADJ, CARBON 10K	
RV43	1-228-994-00	RES, ADJ, CARBON 10K	
RV44	1-228-994-00	RES, ADJ, CARBON 10K	
RV45	1-228-994-00	RES, ADJ, CARBON 10K	
RV46	1-228-994-00	RES, ADJ, CARBON 10K	
RV47	1-228-994-00	RES, ADJ, CARBON 10K	
RV48	1-228-994-00	RES, ADJ, CARBON 10K	
RV49	1-228-994-00	RES, ADJ, CARBON 10K	
RV50	1-228-994-00	RES, ADJ, CARBON 10K	
RV51	1-228-994-00	RES, ADJ, CARBON 10K	
RV401	1-228-938-00	RES, VAR, CARBON 20K	
RV402	1-228-938-00	RES, VAR, CARBON 20K	
RV403	1-228-937-00	RES, VAR, CARBON 20K	
RV404	1-228-937-00	RES, VAR, CARBON 20K	
RV405	1-228-937-00	RES, VAR, CARBON 20K	
RV406	1-228-938-00	RES, VAR, CARBON 20K	

<SWITCH>

REF.NO.	PART NO.	DESCRIPTION	REMARK
S1	1-570-847-11	SWITCH, SLIDE	
S2	1-570-847-11	SWITCH, SLIDE	
S3	1-570-847-11	SWITCH, SLIDE	
S4	1-570-847-11	SWITCH, SLIDE	
S5	1-570-847-11	SWITCH, SLIDE	
S6	1-570-847-11	SWITCH, SLIDE	
S7	1-570-847-11	SWITCH, SLIDE	
S8	1-570-865-11	SWITCH, SLIDE	
S9	1-570-865-11	SWITCH, SLIDE	
S10	1-570-865-11	SWITCH, SLIDE	
S11	1-570-865-11	SWITCH, SLIDE	
S12	1-570-865-11	SWITCH, SLIDE	
S13	1-552-437-00	SWITCH, LEVER	
S401	1-552-737-00	SWITCH, PUSH	
S403	1-516-779-XX	SWITCH, SLIDE	

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*1-621-059-11 DB BOARD
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<CAPACITOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
C1	1-162-211-31	CERAMIC	33PF	5%	50V	
C2	1-162-211-31	CERAMIC	33PF	5%	50V	
C3	1-162-290-31	CERAMIC	470PF	10%	50V	
C4	1-162-290-31	CERAMIC	470PF	10%	50V	

<IC>

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC1	8-759-106-41	IC UPC4570C	

<TRANSISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q1	8-729-205-96	TRANSISTOR 2SC3668-O	
Q2	8-729-205-94	TRANSISTOR 2SA1428-O	
Q3	8-729-205-96	TRANSISTOR 2SC3668-O	
Q4	8-729-205-94	TRANSISTOR 2SA1428-O	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R1	1-215-453-00	METAL	22K	1%	1/4W	
R2	1-215-453-00	METAL	22K	1%	1/4W	
R3	1-249-411-11	CARBON	330	5%	1/4W	
R4	1-249-411-11	CARBON	330	5%	1/4W	
R5	1-247-705-11	CARBON	270	5%	1/4W	
R6	1-247-705-11	CARBON	270	5%	1/4W	

<PLUG>

REF.NO.	PART NO.	DESCRIPTION	REMARK
W1	*1-506-602-11	PLUG, L TYPE (2.0MM PITCH) 5P	
W2	*1-506-602-11	PLUG, L TYPE (2.0MM PITCH) 5P	

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*1-621-062-21 HA BOARD
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<CONNECTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
HA1	*1-566-045-11	PIN, CONNECTOR 6P	
HA2	*1-566-042-11	PIN, CONNECTOR 3P	
HA3	*1-566-041-11	PIN, CONNECTOR 2P	
HA4	*1-566-042-11	PIN, CONNECTOR 3P	
HA5	*1-566-041-11	PIN, CONNECTOR 2P	

<RESISTOR>

REF.NO.	PART NO.	DESCRIPTION				REMARK
R451	1-247-874-11	CARBON	62K	5%	1/4W	

<VARIABLE RESISTOR>

REF.NO.	PART NO.	DESCRIPTION	REMARK
RV451	1-228-936-00	RES, VAR, CARBON 10K	
RV452	1-228-936-00	RES, VAR, CARBON 10K	
RV453	1-228-936-00	RES, VAR, CARBON 10K	
RV454	1-228-936-00	RES, VAR, CARBON 10K	
RV455	1-228-936-00	RES, VAR, CARBON 10K	

<SWITCH>

REF.NO.	PART NO.	DESCRIPTION	REMARK
S451	1-516-779-XX	SWITCH, SLIDE	

X **Y**

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*1-621-051-21	**X BOARD**	
		<LAMP>	
PL1	*1-535-615-11	TERMINAL (LAMP SOCKET)	
		<CONNECTOR>	
X1	*1-566-041-11	PIN, CONNECTOR 2P	
X2	*1-566-041-11	PIN, CONNECTOR 2P	
	*1-621-052-21	**Y BOARD**	
	*4-365-850-00	HOLDER, LED	
		<DIODE>	
D1	8-719-420-94	DIODE LN342GPH	
		<CONNECTOR>	
Y1	*1-566-041-11	PIN, CONNECTOR 2P	
		MISCELLANEOUS	
	⚠ 1-237-582-11	RESISTOR ASSY, HIGH-VOLTAGE	
	⚠ 1-413-289-12	REGULATOR, SWITCHING (TK-15)	
	⚠ 1-451-243-00	DEFLECTION YOKE (Y636PA)	
	⚠ 1-452-302-11	PICTURE TUBE NECK ASSEMBLY	
	⚠ 1-452-443-13	NECK ASSY, PICTURE TUBE (NA367)	
	⚠ 1-453-108-11	DC BLOCK, HIGH-VOLTAGE	
	1-518-590-11	LAMP, PILOT (WITH HOLDER)	
	⚠ 1-541-449-11	FAN, DC (WITH SENSOR)	
	⚠ 1-552-437-11	SWITCH, LEVER	
	⚠ 1-570-052-12	SWITCH, PUSH (AC POWER)(1 KEY)	
	⚠ *1-580-375-21	INLET 3P	
CNJ6	1-559-088-21	CONNECTOR ASSY, ROUND TYPE 14P	
SP1	1-503-255-11	SPEAKER	
V901	⚠ 8-733-023-05	PICTURE TUBE SD-187 (R)	
V902	⚠ 8-733-021-05	PICTURE TUBE SD-187 (G)	
V903	⚠ 8-733-022-05	PICTURE TUBE SD-187 (B)	

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ACCESSORIE & PACKING MATERIALS

PART NO.	DESCRIPTION	REMARK
⚠ 1-590-151-11	CORD SET, POWER	
3-753-799-11	MANUAL, INSTRUCTION	
3-753-800-11	INSTRUCTION	
*4-310-638-00	BAG, PROTECTION	
*4-378-674-01	CUSHION (UPPER) (ASSY)	
*4-378-681-01	CUSHION (LOWER) (ASSY)	
4-378-685-01	SPACER, 200"	
4-378-686-01	SPACER (200"), PICTURE TUBE	
*4-383-076-02	SPACER	
*4-383-085-01	CUSHION (A)	
*4-033-234-01	CUSHION (B)	
*4-033-195-01	INDIVIDUAL CARTON	